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MassDEP RTN 3-23246

Phase IV Final Inspection Report, Remedial Monitoring Report No. 15 and Phase V Remedy Operation Status Report

50 Tufts Street, Somerville, Massachusetts

Submitted to:
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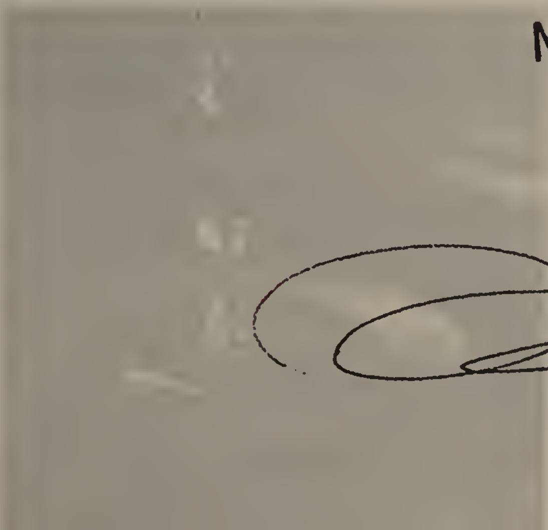

Ileen S. Gladstone, P.E., LSP, LEED AP
Vice President

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Executive Summary

On behalf of UniFirst Corporation (UniFirst) of Wilmington, Massachusetts, GEI Consultants, Inc. (GEI) prepared this Phase IV Final Inspection Report (FIR), Remedial Monitoring Report (RMR) No. 15, and Phase V Remedy Operation Status (ROS) Report for the disposal site located at 50 Tufts Street in Somerville, Massachusetts (the Site; Fig. 1-1). The Site is identified by Massachusetts Department of Environmental Protection (MassDEP) Release Tracking Number (RTN) 3-23246[1]. The Site includes the 50 Tufts Street property (the Property), other properties in the neighborhoods east and immediately north, south, and west of the Property, and the Michael E. Capuano Early Childhood Center (Capuano Center) located at 150 Glen Street in Somerville, Massachusetts (Fig. 1-2). This report covers the period from December 16, 2010 through July 1, 2011.

Background

From approximately 1955 to 2002, the Property was used for storage and distribution of industrial chemicals, laundry supplies, and dry cleaning supplies. Chemicals stored at, and transported to and from the Property, included chlorinated volatile organic compounds (VOCs). These chlorinated VOCs – particularly tetrachloroethylene (also called perchloroethylene [PCE]), trichloroethylene (TCE), and 1,1,1-trichloroethane (TCA) – have been detected in soil, soil vapor, indoor air, and groundwater at the Property and are therefore the compounds of potential concern (COPCs) for the Site.

The detection of chlorinated VOCs in indoor air at some buildings within the Site required the implementation of an Immediate Response Action (IRA). IRA activities by UniFirst began at the Site in March 2006 and an "IRA Completion Report and RMR No. 11" was submitted to the MassDEP on November 16, 2009. The Site is currently classified Tier IC (Permit No. W085813). The "Phase II Comprehensive Site Assessment (CSA), Method 3 Risk Characterization, and Phase III Remedial Action Plan (RAP)" (Phase II/III) for the Site was submitted to MassDEP on July 14, 2008. The "Phase IV Remedy Implementation Plan" (Phase IV RIP) for the Site was submitted to MassDEP on August 10, 2009. A "Revised Supplemental Method 3 Risk Characterization" for the Site was submitted to MassDEP on November 16, 2009, as part of the IRA Completion Report and RMR No. 11. The "Phase IV Status Report No. 3 and RMR No. 14" was submitted to MassDEP on February 10, 2011.

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[1] For tracking and reporting purposes, MassDEP RTNs for this Site have been consolidated under one number, RTN 3-23246.

On February 1, 2011, UniFirst received a Notice of Audit Findings and Notice of Noncompliance (NOAF/NON) from MassDEP retracting the IRA Completion Report submitted on November 16, 2009. UniFirst submitted a "Response to Notice of Audit Findings and Notice of Noncompliance" and an "IRA Completion Report Amendment" on April 1, 2011 to address issues that the MassDEP raised in the NOAF/NON.

The remedial action alternative (RAA) selected by the Phase III evaluation included:

1. Installing Exposure Pathway Elimination Measures (EPEMs) to the extent feasible (e.g. vapor barrier and venting system, or sub-slab depressurization systems (SSDSs)) and recording Activity and Use Limitations (AULs) for residences with Critical Exposure Pathways (CEPs), and installing EPEMs for occupied commercial buildings to reduce chlorinated VOC concentrations in indoor air to that which constitutes a condition of No Significant Risk (NSR).
2. Continuing to operate the SSDS and soil vapor extraction (SVE) system at the Property to remove contaminants from the vadose zone.
3. Conducting a Site-wide Monitored Natural Attenuation (MNA) program to evaluate overburden and bedrock groundwater plume concentrations over time to assess the rate of natural attenuation processes, and to confirm that groundwater concentrations of chlorinated VOCs are generally stable or decreasing.

Construction and implementation of the Comprehensive Response Action (CRA) have been completed; additional activities, such as operation and monitoring of active remedial systems, will be conducted in the future under Phase V. This report therefore documents the completion of Phase IV activities and describes steps to be taken going forward during Phase V ROS. The Site will operate in ROS until a Permanent Solution is achieved, except for any portions of the Site that may be closed under Response Action Outcome Partial (RAO-P) Statements. Operating the SSDS and SVE systems, together with MNA, will ultimately achieve a Permanent Solution for the Site.

In accordance with the Massachusetts Contingency Plan (MCP; 310 CMR 40.0878), this Phase IV FIR, RMR No. 15, and Phase V ROS Report documents the completion of Phase IV activities, summarizes the remedial actions performed during the last reporting period, and documents the transition of CRAs that rely on active operation and monitoring to Phase V ROS.

A summary of operation, maintenance and/or monitoring (OMM) activities conducted at the Site to date are as follows:

Capuano Center

An SSDS is installed in the east wing of the Capuano Center. In addition, GEI sealed certain slab/wall joints at the Capuano Center to mitigate a potential preferred migration pathway. GEI has conducted 23 rounds of indoor air sampling since the SSDS was installed in February 2007. The CEP has been eliminated and a condition of NSR has been achieved for occupants of the Capuano Center. Accordingly, it is GEI's opinion that the system has achieved the remedial objectives, and was constructed and is operating in accordance with the design standards provided in the Phase IV RIP.

Given that it has been determined that the system is achieving its remedial design objectives, GEI will discontinue indoor air sampling, but will continue to inspect and maintain the system. GEI will continue to monitor operational parameters and sub-slab conditions for the system (e.g., flow rate, vacuum) on a monthly basis to confirm ongoing system performance. GEI will continue operation and monitoring of the SSDS at the Capuano Center under ROS.

Residential and Commercial Properties

As part of the IRA, while Site conditions were still under investigation, GEI took timely action to evaluate and implement measures to eliminate or mitigate CEPs to the extent feasible. The feasibility of such measures was determined by physical conditions, including the suitability of each property to installation of active or passive vapor controls, and by amenability of property owners to provide legal access. Mitigative measures were initially implemented as IRA activities. The Phase II/Phase III assessment and evaluation of RAAs included response actions to address CEPs as part of the recommended CRA. With the submittal of the Phase IV RIP, the IRA addressing CEPs was closed with an IRA Completion Report and an IRA Completion Report Amendment, in accordance with the MCP (310 CMR 40.0427). Following the submittal of the IRA Completion Report and IRA Completion Report Amendment, response actions to eliminate or mitigate CEPs at properties, where feasible, were continued under Phase IV.

The following is a summary of activities conducted and results obtained with respect to EPEMs through July 1, 2011, the end of the Phase IV reporting period:

- EPEMs have been installed in 20 residential and commercial properties, not including the EPEMs installed at 50 Tufts Street, 60 Tufts Street, and the Capuano Center. The results of post-EPEM installation indoor air sampling indicate that each of the EPEMs has achieved the remedial objectives.
- A condition of NSR exists at 19-19A Morton Street. However, low concentrations of PCE have been detected in recent indoor air samples. Based on indoor air sampling results for samples collected during this reporting period, a condition of NSR exists at

19-19A Morton Street and the EPEM has achieved the remedial objectives. GEI will collect one additional sample in winter 2012 to continue to confirm the EPEM's effectiveness.

- A condition of NSR exists at 4 Morton Street. However, low concentrations of PCE have been detected in recent indoor air samples. GEI has performed an additional round of confirmatory indoor air testing in July 2011; however, the indoor air testing results were not available during this reporting period. The July 2011 results will be included in the next Phase V Status Report.
- A condition of NSR exists at 10 Morton Street. However, low concentrations of TCE were detected in recent indoor air samples. PCE has not been detected in post-EPEM indoor air samples. Based on indoor air sampling results for samples collected during this reporting period, a condition of NSR exists at 10 Morton Street and the EPEM has achieved the remedial objectives.
- As documented in the IRA Completion Report Amendment, the owners of 9, 17, and 19 Tufts Street have denied GEI access to enter their residences and install an EPEM. Implementation of remedial systems on these properties to achieve a condition of NSR therefore is infeasible. Environmental conditions on these properties will continue to be addressed as part of the CRA in Phase V, including ongoing operation of the SSDS and SVE systems on the Property and MNA at the Site as a whole. In the event that an owner consents in the future to provide access, and results of indoor air sampling indicate that a condition of NSR has not been achieved, an EPEM will be installed as a Release Abatement Measure (RAM).

It is GEI's opinion that the residential and commercial EPEMs have achieved the remedial objectives, and were constructed and are operating in accordance with the design standards provided in the Phase IV RIP.

GEI will continue to perform active monitoring and maintenance of Option 1 EPEMs under ROS. A RAO-P Statement will be submitted for each property with an Option 2 or 3 EPEM, where the EPEM has achieved the remedial objectives, an AUL has been recorded for the property to maintain the integrity of the EPEM, and sufficient post-EPEM indoor air sampling has been conducted. The filing of an RAO-P Statement for an individual property documents the achievement of regulatory closure under the MCP. Therefore, the Phase V provisions will not apply to properties for which an RAO-P Statement has been submitted.

60 Tufts Street

An SSDS is installed in the 17-unit condominium building at 60 Tufts Street. The SSDS monitoring data show that the sub-slab vacuum field generated by the SSDS influences

nearly the entire floor slab area. Indoor air testing results indicate that a condition of NSR has been achieved for building occupants at 60 Tufts Street. Accordingly, it is GEI's opinion that the system has achieved the remedial objectives, and was constructed and is operating in accordance with the design standards provided in the Phase IV RIP.

Given that it has been determined that the system is achieving its remedial design objectives, GEI will discontinue indoor air sampling, but will continue to inspect and maintain the system. GEI will continue to monitor operational parameters and sub-slab conditions for the system (e.g., flow rate, vacuum) on a monthly basis to confirm ongoing system performance. GEI will continue operation and monitoring of the SSDS at 60 Tufts Street under ROS.

50 Tufts Street Property

An SSDS and an SVE system are installed at the Property. The SSDS monitoring data show that the sub-slab vacuum field generated by the SSDS covers most of the building slab area. The building was vacant during the reporting period. However, based on indoor air testing results collected since the combined system has been in operation, a condition of NSR has been achieved for the building at the Property for full-time commercial workers under future conditions if the building becomes occupied. Accordingly, it is GEI's opinion that the system has achieved the remedial objectives, and was constructed and is operating in accordance with the design standards provided in the Phase IV RIP. GEI will continue operation and monitoring of the combined SSDS/SVE system at 50 Tufts Street under ROS.

50 Tufts Street Contaminant Mass Removal

The combined SSDS/SVE system installed at the Property serves to protect indoor air quality and to remove source material from the vadose zone below and around the building. Monitoring data from both the SSDS and SVE components through June 13, 2011 show that approximately 6,921 pounds (lbs) of VOCs have been removed from the vadose zone at the Property. GEI will continue operation and monitoring of the combined SSDS/SVE system at 50 Tufts Street under ROS.

Monitored Natural Attenuation

An evaluation of the MNA program indicates that the groundwater plumes are stable, the groundwater concentrations of chlorinated VOCs are not significantly increasing, and natural attenuation processes are occurring at the Site which will likely reduce contaminant concentrations in groundwater over time. GEI will conduct groundwater sampling once per year at the majority of monitoring wells at the Site to confirm that the overburden and bedrock groundwater plumes remain stable.

During this reporting period, a comprehensive round of groundwater sampling was conducted. GEI has been monitoring recent fluctuations in groundwater concentrations in monitoring wells MW122 and MW112A. Groundwater concentrations decreased slightly in MW112A, and have stabilized in MW122 and are within a range of fluctuation that is consistent with continuing plume stability, particularly when considered in context with prior groundwater results from all monitoring wells. GEI will perform additional groundwater sampling in fall 2011.

Remedial Monitoring Report No. 15

RMR No. 15, documenting OMM activities of active remedial systems at the Site, is presented in the BWSC-108A and 108B Transmittal Forms in Appendix A.

Phase V Remedy Operation Status

The CRA for the Site includes continued active operation and maintenance of the existing commercial and residential EPEMs, and the SSDS and SVE system at the Property, for the purpose of achieving a Permanent Solution pursuant to 310 CMR 40.0890. Therefore, it is GEI's opinion that ROS as defined by the MCP (310 CMR 40.0893[1]) applies to the operation of the selected CRA.

It is GEI's opinion that the Site meets the requirements for conducting Phase V ROS activities:

- The Phase III RAP was completed on July 14, 2008. The Phase IV RIP was completed on August 10, 2009.
- A final inspection has been performed and confirmed that the CRA has been constructed and implemented in accordance with the Phase IV RIP and is meeting projected design standards to achieve a Permanent Solution.
- The Phase II/Phase III reports demonstrated that each source of oil and/or hazardous material (OHM) is controlled at the Site. Residual dense non-aqueous phase liquid (DNAPL) is not migrating, and the dissolved-phase groundwater plumes are stable and are not causing an increase in concentrations of VOCs in groundwater, soil, soil vapor, or indoor air.
- Any substantial hazards have been eliminated as documented in the Substantial Hazard Evaluation (SHE) completed by ARCADIS U.S., Inc. (ARCADIS) of Chelmsford, Massachusetts in August 2011. A copy of the SHE is provided in Appendix G.

1. Introduction

On behalf of UniFirst Corporation (UniFirst) of Wilmington, Massachusetts, GEI Consultants, Inc. (GEI) prepared this Phase IV Final Inspection Report (FIR), Remedial Monitoring Report (RMR) No. 15 and Phase V Remedy Operation Status (ROS) Report for the disposal site located at 50 Tufts Street in Somerville, Massachusetts (the Site; Fig. 1-1). The Site is identified by Massachusetts Department of Environmental Protection (MassDEP) Release Tracking Number (RTN) 3-23246[1]. The Site includes the 50 Tufts Street property (the Property), other properties in the neighborhoods east and immediately north, south, and west of the Property, and the Michael E. Capuano Early Childhood Center (Capuano Center) located at 150 Glen Street in Somerville, Massachusetts (Fig. 1-2). This report covers the period from December 16, 2010 through July 1, 2011.

1.1 Site Contacts (310 CMR 40.0874[3][a])

Person responsible for submittal of the Phase IV FIR:
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[1] For tracking and reporting purposes, MassDEP RTNs for this Site have been consolidated under one number, RTN 3-23246.

Person who will own, operate, and/or maintain the selected Remedial Action Alternative (RAA):
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1.2 Background

From approximately 1955 to 2002, the Property was used for storage and distribution of industrial chemicals, laundry supplies, and dry cleaning supplies. Chemicals stored at, and transported to and from the Property, included chlorinated volatile organic compounds (VOCs). These chlorinated VOCs – particularly tetrachloroethylene (also called perchloroethylene [PCE]), trichloroethylene (TCE), and 1,1,1-trichloroethane (TCA) – have been detected in soil, soil vapor, indoor air, and groundwater at the Property and are therefore the compounds of potential concern (COPCs) for the Site.

The detection of chlorinated VOCs in indoor air at some buildings within the Site required the implementation of an Immediate Response Action (IRA). IRA activities by UniFirst began at the Site in March 2006 and an "IRA Completion Report and RMR No. 11" was submitted to the MassDEP on November 16, 2009. The Site is currently classified Tier IC (Permit No. W085813). The "Phase II Comprehensive Site Assessment (CSA), Method 3 Risk Characterization, and Phase III Remedial Action Plan (RAP)" (Phase II/III) for the Site was submitted to MassDEP on July 14, 2008. The "Phase IV Remedy Implementation Plan" (Phase IV RIP) for the Site was submitted to MassDEP on August 10, 2009. A "Revised Supplemental Method 3 Risk Characterization" for the Site was submitted to MassDEP on November 16, 2009, as part of the IRA Completion Report and RMR No. 11. The "Phase IV Status Report No. 3 and RMR No. 14" was submitted to MassDEP on February 10, 2011.

On February 1, 2011, UniFirst received a Notice of Audit Findings and Notice of Noncompliance (NOAF/NON) from MassDEP retracting the IRA Completion Report submitted on November 16, 2009. UniFirst submitted a "Response to Notice of Audit Findings and Notice of Noncompliance" and an "IRA Completion Report Amendment" on April 1, 2011 to address issues that the MassDEP raised in the NOAF/NON.

GEI filed a Tier IC permit extension on June 20, 2011, 45 days prior to the expiration of the current permit. However, since with submittal of this Report the Site is being transitioned into Phase V ROS, a new permit is unnecessary.

UniFirst is submitting this Phase IV FIR, RMR No. 15, and Phase V ROS Report to document the completion of Phase IV activities and the transition of comprehensive response actions to Phase V ROS.

The Phase II/Phase III identified the following areas of the Site requiring investigation and mitigation:

- The Property;
- The Capuano Center;
- 60 Tufts Street, a 17-unit condominium building north of the Property; and
- Certain residences and commercial buildings located in the vicinity of the Property.

The RAA selected by the Phase III and implemented in the Phase IV was:

1. Installing Exposure Pathway Elimination Measures (EPEMs) to the extent feasible (e.g. vapor barrier and venting system, or sub-slab depressurization systems [SSDSs]) and recording Activity and Use Limitations (AULs) for residences with Critical Exposure Pathways (CEPs), and installing EPEMs for occupied commercial buildings to reduce chlorinated VOC concentrations in indoor air to that which constitutes a condition of No Significant Risk (NSR).
2. Continuing to operate the soil vapor extraction (SVE) system at the Property to remove contaminants from the vadose zone.
3. Conducting a Site-wide Monitored Natural Attenuation (MNA) program to evaluate overburden and bedrock groundwater plume concentrations over time to assess the rate of natural attenuation processes, and to confirm that groundwater concentrations of chlorinated VOCs are generally stable or decreasing.

As part of the IRA, while Site conditions were still under investigation, GEI took timely action to evaluate and implement measures to eliminate or mitigate CEPs to the extent feasible. The feasibility of such measures was determined by physical conditions, including the suitability of each property to installation of active or passive vapor controls, and by amenability of property owners to provide legal access. Mitigative measures were initially implemented as IRA activities. The Phase II/Phase III assessment and evaluation of RAAs included response actions to address CEPs as part of the recommended Comprehensive Response Action (CRA). Following the submittal of the Phase IV RIP, the IRA addressing CEPs was closed with an IRA Completion Report, in accordance with the Massachusetts Contingency Plan (MCP; 310 CMR 40.0427). Following the submittal of the IRA Completion Report, response actions to eliminate or mitigate CEPs at properties, where feasible, were continued under Phase IV. On February 1, 2011, MassDEP issued its

NOAF/NON taking issue with portions of the IRA Completion Report. GEI addressed those issues in its April 1, 2011 response to the NOAF/NON and in the IRA Completion Report Amendment. GEI continued response actions under Phase IV and will continue to do so now under ROS.

GEI continues to collect indoor air samples to confirm the effectiveness of installed EPEMs. GEI conducts groundwater sampling and analysis as part of the MNA program.

Construction and implementation of the CRA have been completed; additional activities, such as operation and monitoring of active remedial systems, will be conducted in the future under Phase V. This report therefore documents the completion of Phase IV activities and describes steps to be taken going forward during Phase V ROS. The Site will operate in ROS until a Permanent Solution is achieved, except for any portions of the Site that may be closed under Response Action Outcome Partial (RAO-P) Statements (Section 2.5). Operating the SSDS and SVE systems, together with MNA, will ultimately achieve a Permanent Solution for the Site.

1.3 Purpose and Scope

The purpose of this submittal is to provide a description and the results of Phase IV activities conducted from December 16, 2010 through July 1, 2011 and to document the completion of Phase IV activities in accordance with the MCP (310 CMR 40.0878). This report also summarizes RAO-P Statements achieved at the Site and the Phase V ROS activities being undertaken in accordance with the MCP (310 CMR 40.0891).

This submittal includes the following for the reporting period of December 16, 2010 through July 1, 2011:

- A description of the type and frequency of operation, maintenance, and/or monitoring (OMM) activities.
- A description of any significant modifications made to the OMM activities since the last reporting period.
- An evaluation of the performance of the CRA during the reporting period.
- A description of any conditions or problems noted during the reporting period that may have affected the CRA performance.
- A description of the measures taken to correct any conditions or problems that may have been encountered during the reporting period.

Details of the engineering concepts, design criteria, construction plans, and specifications were previously provided to MassDEP as part of the Phase IV RIP, IRA Status Reports,

RMRs, IRA Plan Modifications, and the IRA Completion Report and its Amendment, and are not re-presented in this report.

1.4 Public Involvement (310 CMR 40.1400)

UniFirst and GEI conducted a series of community meetings to inform property owners, residents, and City of Somerville (the City) officials about the Site. GEI will provide copies of this Phase IV FIR, RMR No. 15, and Phase V ROS Report to the local public document repositories that were established for the Site at the Somerville Central Public Library and at the City of Somerville Clerk's Office. GEI will also provide an electronic version of this report to the City for posting to the City's web site.

CRA Transmittal Forms (BWSC-108, BWSC-108A, and BWSC-108B) for RTN 3-23246 were submitted through eDEP (Transaction No. 390954) on August 4, 2011. Copies of the eDEP Transmittal Forms are provided in Appendix A.

Copies of property owner notification letters, including notice of sampling letters, chemical testing results letters, and other miscellaneous correspondence, are in Appendix B.

2. Phase IV Completion

2.1 Regulatory Framework

According to 310 CMR 40.0878, upon completion of construction activities and initial implementation of the CRA, a final inspection shall be conducted to ensure that the CRA has been constructed in accordance with plans provided in the Phase IV RIP and that, following any modifications or adjustments necessary to optimize the performance of the remedial systems, the CRA is meeting design standards.

In accordance with 310 CMR 40.0878 and 310 CMR 40.0879 this report includes:

- A description of the Phase IV final inspection activities
- A Phase IV Completion Statement

In accordance with 310 CMR 40.0881, the outcome of Phase IV completion may be continuing OMM of the CRA (including ROS) to achieve an RAO under 310 CMR 40.1000. Section 10 provides details of ongoing Phase V activities.

2.2 Implementation of CRA

Under the provisions of 310 CMR 40.0414(3) and 40.0427(1)(c), GEI systematically implemented preliminary response actions, under an approved IRA Plan, to identify and address CEPs to the extent feasible. Following the completion of the Risk Characterization, the Phase III, and the Phase IV RIP, GEI has continued to construct, implement, and operate the CRA under Phase IV. Any Imminent Hazards to human health, safety, public welfare, and the environment that were identified at the Site have been eliminated. As discussed in the Phase II/Phase III and Phase IV RIP, the remedial alternative selected for the Site includes:

- Implementation and operation of an SSDS at the Capuano Center.
- Implementation of site-specific EPEMs to mitigate the vapor intrusion pathway in residences and commercial buildings beyond the Property boundaries.
- Implementation and operation of an SSDS at 60 Tufts Street
- Implementation and operation of the SSDS and SVE system at the Property.
- MNA program.

Construction and implementation of the CRA have been completed. Additional activities, such as operation and monitoring of active remedial systems, will be conducted in the future under Phase V ROS until a Permanent Solution is achieved.

2.3 Permits, Licenses, and Approvals (310 CMR 40.0878[3])

As required under the MCP (310 CMR 40.0878[3]), this section describes the permits, licenses, and/or approvals obtained relative to the design, construction, and operation of the remedial systems installed at the Site. These permits/approvals include:

2.3.1 Capuano Center

- *Permits:* Electrical Permit from the City of Somerville Department of Inspectional Services.
- *Licenses:* None
- *Approvals:* On January 19, 2007, GEI received verbal approval from MassDEP of the Michael E. Capuano Early Childhood Education Center – Interim Sub-Slab Depressurization System Design Memorandum dated January 17, 2007. GEI received approval from the Somerville School Committee for installation of the system on January 23, 2007 during a School Committee meeting.

Subsequent IRA Plan Modifications providing for ongoing sampling, monitoring, and system upgrade activities were approved formally, verbally, or via email by MassDEP.

2.3.2 Residential and Commercial Properties

- *Permits:* Depending on the EPEM Option installed, Electrical Permits, Building Permits, and/or Plumbing Permits were obtained from the City of Somerville Department of Inspectional Services. The individual permits required at each EPEM property are presented in Table 2-1.
- *Licenses:* None.
- *Approvals:* Design, operation, monitoring, and sampling provisions for EPEM Options 1, 2, and 3 (including 60 Tufts Street) were submitted in various IRA Plan Modifications and the Phase IV RIP and were approved formally, verbally, or via email by MassDEP.

GEI anticipates recording AULs for each property where an Option 2 or 3 EPEM is installed and for some of the properties where an Option 1 EPEM is installed. The AUL protects the integrity of the EPEM and provides for ongoing monitoring to confirm EPEM effectiveness. The properties for which an AUL has been recorded are presented in Table 2-1.

2.3.3 60 Tufts Street Property

- *Permits:* Electrical Permit from the City of Somerville Department of Inspectional Services.
- *Licenses:* None
- *Approvals:* Design, operation, monitoring, and sampling provisions for 60 Tufts Street were submitted in IRA Plan Modification No. 1, various IRA Status Reports, and the Phase IV RIP and were approved formally, verbally, or via email by MassDEP.

2.3.4 50 Tufts Street Property

- *Permits:* Electrical Permit from the City of Somerville Department of Inspectional Services.
- *Licenses:* None
- *Approvals:* IRA Plan Modification No. 5 Conditional Approval Letter from MassDEP to UniFirst dated June 5, 2007. IRA Plan Modification No. 6 verbally approved by MassDEP on July 15, 2007.

2.4 Phase IV Completion Statement

The LSP-of-Record for the Site, Ileen S. Gladstone of GEI, or her representatives, inspected the CRA after construction and initial implementation. It is GEI's opinion that the CRA was constructed and is operating in accordance with the design standards provided in the Phase IV RIP. As described in Section 2.2 of this submittal, the CRA was constructed under an approved IRA Plan and under the Phase IV RIP. An RAO has not yet been achieved for the entire Site, and the active operation and maintenance of remedial systems under Phase V ROS is necessary to achieve a Permanent Solution. The provisions of Phase V are discussed in Section 10.

2.5 Response Action Outcomes

An evaluation of the MNA program indicates that the groundwater plumes are stable, the groundwater concentrations of chlorinated VOCs are not significantly increasing, and natural attenuation processes are occurring at the Site which will likely reduce contaminant concentrations in groundwater over time. Accordingly, the source of contamination at the Site has been controlled. In addition, the Method 3 Risk Characterizations prepared for the Site have demonstrated that a condition of NSR exists at many of the individual properties at

the Site. As a result, many of the individual properties are eligible for an RAO-P Statement in accordance with the MCP (310 CMR 40.1000).

The filing of an RAO-P Statement for an individual property documents the achievement of regulatory closure under the MCP. Therefore, the Phase V provisions do not apply to properties for which an RAO-P Statement has been submitted. The properties that have achieved RAO-P status are shown on Fig. 2-1. A summary of the different classes of RAO-P Statements to be submitted in the future for properties at the Site, depending on the property-specific conditions and the type of mitigation, if any, conducted at the property, is contained in Sections 2.5.1 and 2.5.2.

As discussed further in Section 10, active operation and maintenance is required for Option 1 EPEMs. Therefore, an RAO-P Statement will not be filed for properties with an Option 1 EPEM, and OMM of the Option 1 EPEMs will continue under ROS.

2.5.1 Class A-3 RAO-P

GEI will attempt to record an AUL at each property with an Option 2 or 3 EPEM to maintain the integrity of the EPEM. After an AUL is recorded, GEI will prepare a Class A-3 RAO-P for residential properties with Option 2 or Option 3 EPEMs where 2 years of post-installation indoor air samples have demonstrated that the EPEM is effective. Following the post-installation indoor air sampling, GEI will continue annual inspections of Option 2 and 3 EPEMs as provided for in the Phase IV RIP. The properties that have achieved a Class A-3 RAO-P are presented in Fig. 2-1. If a property owner does not sign the AUL, the property will continue to be monitored as part of ROS activities.

2.5.2 Class B-1 RAO-P

GEI will prepare a Class B-1 RAO-P for residences where a CEP does not exist, as demonstrated by indoor air sampling or a lines-of-evidence evaluation, and an EPEM will not be installed. GEI will also prepare Class B-1 RAO-Ps for residences where a Method 3 Risk Characterization indicated that concentrations of chlorinated VOCs in indoor air constitute NSR, and it is infeasible to install an EPEM. In addition, GEI will prepare a Class B-1 RAO for the portion of the Site occupied by public right of ways. The properties that have achieved a Class B-1 RAO-P are presented in Fig. 2-1.

3. Data Collection

3.1 Groundwater Sampling

GEI conducted annual groundwater sampling at 20 monitoring wells in April 2011. A summary of all GEI groundwater sampling activities at the Site, including dates of sampling during this reporting period, is in Table 3-1.

Based on the historic quarterly groundwater sampling conducted since 2006, the nature and extent of groundwater contamination at the Site has been well-characterized. In addition, groundwater analytical results are incorporated into the MNA program to support the plume stability monitoring and natural attenuation evaluation, as discussed in Section 8. Based on our analysis of the Mann-Kendall statistical trend test results, which incorporates the additional groundwater testing data, in general the PCE, TCE, and TCA groundwater plumes continue to be stable at the Site or are slightly decreasing.

Groundwater testing results are summarized in Table 3-2, along with groundwater data from previous investigations. Monitoring well locations and the monitoring wells sampled during this reporting period are displayed in Fig. 3-1. The laboratory data reports associated with the April 2011 groundwater testing are in Appendix C.

3.2 Indoor Air Sampling

Between January 2006 and July 1, 2011, GEI collected indoor air samples at 72 residences and commercial buildings. Fig. 3-2 shows buildings where GEI conducted indoor air sampling. The procedure for collecting indoor air samples was presented in IRA Status Report No. 3. Samples are typically collected from the basement and first floor of each building.

Between December 16, 2010 and July 1, 2011, GEI collected indoor air samples from 14 residential and commercial properties, and the Capuano Center. Locations and dates for the residential and commercial property sampling events, not including the Capuano Center, are in Table 3-3.

The indoor air samples were submitted to Accutest Laboratories, Inc. (Accutest) of Marlborough, Massachusetts for laboratory analysis by U.S. Environmental Protection Agency (EPA) Method TO-15 with the following modified analytes list:

- 1,1-Dichloroethane
- 1,1-Dichloroethylene (1,1-DCE)
- trans-1,2-Dichloroethylene
- cis-1,2-Dichloroethylene
- 1,1,1-Trichloroethane (TCA)
- 1,1,2,2-Tetrachloroethane
- 1,1,2-Trichloroethane
- Tetrachloroethylene (PCE)
- Trichloroethylene (TCE)
- Vinyl Chloride

Indoor air testing results for properties sampled during this reporting period and the historic indoor air testing results for these properties are summarized in Tables 3-4 through 3-17. Indoor air testing results for samples collected at the Capuano Center are summarized in Table 3-18. The laboratory data reports are in Appendix C.

3.3 Indoor Air Sampling – Checklists and Methods

GEI typically collected indoor air samples from the basement and first floor of residences and commercial buildings using SUMMA® canisters and regulators provided by Accutest. Each canister was certified clean by Accutest. Copies of the certifications are in Appendix C. Typically, indoor air samples are collected over an approximately 24-hour period in residential buildings and over an approximately 8-hour period in commercial buildings. However, during this reporting period, indoor air samples were collected over an approximately 4-hour period at 162-164 Glen Street.

Flow regulators were attached to the SUMMA® canisters at the location of the testing. The SUMMA® canisters were placed so that the air inlet was approximately 3 to 5 feet above the floor. The laboratory-set flow regulator was then turned on, and the starting pressure and time recorded. The regulator was turned off before reaching ambient pressure, and the final pressure and time were recorded. Indoor Air Sampling Checklists and Photo Logs completed for each indoor air sample collected from a residential or commercial property during this reporting period are in Appendix D.

3.4 Meteorological Conditions

GEI typically measured outdoor meteorological conditions during each of the indoor air sampling events. GEI also typically measured indoor temperature and barometric pressure during indoor air sampling. Measurements were taken with a portable barometer and thermometer, and were recorded on the Indoor Air Sampling Checklists (Appendix D). Meteorological conditions recorded during indoor air sampling events for this reporting period are summarized in Table 3-19.

3.5 Sub-Slab Soil Sampling

Sub-slab soil sampling was not conducted during this monitoring period.

4. Capuano Center Phase IV Activities and Final Inspection

4.1 Introduction

The remedial system at the Capuano Center is an SSDS with 18 sub-slab extraction points in 6 classrooms of the east wing. The interior slab/exterior wall joints of the six classrooms were sealed with a flexible epoxy sealant and extraction points were installed horizontally through the exterior wall. The extraction points are attached to three collection headers in exterior underground trenches and are operated by a 1.5-horsepower regenerative blower with pressure gauges, controls, and particulate filter housed in a garden-style shed.
A discharge pipe extends from the blower shed to above the roofline of the Capuano Center. GEI began operating the SSDS on February 1, 2007.

The system does not include off-gas treatment. Based upon the measured flow rate and VOC concentrations, the annual discharge rate of VOCs from the system has been significantly less than 100 lbs per year; therefore, no off-gas treatment is required per MassDEP Policy No. WSC-94-150: "Off-gas Treatment of Point-Source Remedial Air Emissions," dated 1994.

The following Phase IV activities were conducted at the Capuano Center from December 16, 2010 through July 1, 2011:

- Monthly mechanical inspections of the SSDS through July 1, 2011.
- Indoor and outdoor air sampling in March 2011.

4.2 Permits, Licenses, and Approvals (310 CMR 40.0878[3])

See Section 2.3.

4.3 Remedial Objectives

The objectives of the Capuano Center SSDS are to:

- Eliminate or mitigate, to the extent feasible, the potential soil vapor intrusion pathway.
- Achieve a condition of NSR for occupants of the Capuano Center.

The SSDS monitoring data show that the sub-slab vacuum field generated by the SSDS influences the southern portion of the east wing. This vacuum field, together with the physical sealing of the slab/wall joint, is controlling the soil vapor migration pathway to indoor air.

4.4 Operation and Monitoring

The system has been monitored in accordance with the requirements and schedule in the Phase IV RIP, and in accordance with the requirements and schedule presented in subsequent Phase IV Status Reports. Operational parameters and sub-slab conditions for the system (e.g., flow rate, vacuum) are monitored monthly and indoor air quality has been monitored two times per year. The most recent round of indoor air sampling was conducted from March 16 through 17, 2011. Sampling results are summarized in Table 3-18. Laboratory data reports are in Appendix C. A summary of sampling and monitoring activities conducted during this reporting period is provided in Table 4-1 and Field Monitoring Forms are provided in Appendix E.

4.5 Efficiency and Effectiveness

The SSDS monitoring data show that the sub-slab vacuum field generated by the SSDS influences the southern portion of the east wing. GEI has conducted 23 rounds of indoor air sampling since the SSDS was installed in February 2007. Based on the indoor air testing results, the SSDS has eliminated the potential soil vapor migration pathway, the CEP has been eliminated, and a condition of NSR has been achieved for occupants of the Capuano Center. The SSDS, therefore, is achieving the remedial design objectives.

4.6 System Maintenance and Modifications

No modifications were made to the system during the reporting period.

4.7 Management of Waste Materials

Infrequently, condensate in system piping may accumulate in the subsurface collection header pipes, the cleanout drain for the header pipes, or the moisture separator installed as part of the blower assembly. If observed, SSDS condensate is drained from the moisture separator or pumped from the headers into the cleanout, which drains into the subsurface at the property.

4.8 Final Inspection

The LSP-of-Record for the Site, Ileen S. Gladstone of GEI, or her representatives, inspected the Capuano Center SSDS on numerous occasions since construction and startup of the system in 2007. The most recent inspection was on June 13, 2011. It is GEI's opinion that the system was constructed and is operating in accordance with the design standards provided in the Phase IV RIP and is meeting the remedial design objectives.

4.9 Ongoing Phase V ROS Activities (Modification of Phase IV RIP O&M)

GEI has completed 23 rounds of indoor air sampling in the Capuano Center. The results of each round of sampling show that the system is meeting remedial design objectives. More specifically, sampling results demonstrate that the system meets design objectives when operated to maintain a flow rate of approximately 120 standard cubic feet per minute (scfm) and a vacuum of -0.3 to -0.5 inches of water as measured at each manifold header. Accordingly, monitoring need only be conducted of these and related operating parameters to confirm that the system is continuing to meet design objectives. In Phase IV ROS, GEI will discontinue indoor air sampling and will rely on monitoring of operating parameters for the system.

To confirm system performance, GEI will continue to monitor operational parameters and sub-slab conditions for the system (e.g., flow rate, vacuum) on a monthly basis during the winter months, and quarterly during the rest of the year. During monitoring events, GEI will also perform maintenance tasks which may include documenting whether the blower is operating normally and if alarm conditions are present, draining accumulated water from the moisture separator or collection headers, changing the filter element for the blower, changing the batteries in the auto-dialer, and correcting deficiencies observed during routine inspection of system components.

5. Residential and Commercial Properties

5.1 Introduction

Through July 1, 2011, EPEMs had been installed at 20 residential and commercial properties. EPEMs were also installed at 50 Tufts Street, 60 Tufts Street, and the Capuano Center. The EPEMs at 50 Tufts Street, 60 Tufts Street, and the Capuano Center are discussed independently in this report.

Between December 16, 2010 and July 1, 2011, no new EPEMs were installed. EPEM modifications were performed at 95 Franklin Street and 27 Tufts Street (Section 5.4.3). Fig. 5-1 shows the buildings with EPEMs installed. Table 5-1 presents the as-built design information for each installed EPEM.

Prior to installing EPEMs in residences, GEI installed indoor air purifiers with activated carbon filters as a mitigation measure. At residences where the concentrations of chlorinated VOCs constitute a condition of NSR, UniFirst has left the air purifiers, effectively giving them to the property owners.

The EPEM designs are categorized as Option 1, Option 2, or Option 3 as conceptually defined below:

- Option 1 – SSDS: This option includes the installation of one or more sub-slab vapor extraction points and a collection piping network connected to an electric fan located outside the building envelope. The fan is equipped with a condensate bypass drain and the fan exhaust is discharged above the eave line of the roof. To date, no SSDSs (except for the system at the Property) require off-gas treatment. This option is installed in buildings with adequate sub-slab air flow and a competent concrete slab and activated in residences where Option 2 or Option 3 systems have been installed and did not achieve design objectives.
- Option 2 – Vapor Trench: The vapor trench option consists of a sub-slab venting system installed in a shallow trench around the interior basement perimeter, cement stucco applied to the walls, and an epoxy vapor barrier applied to the slab and stucco walls. The trench is backfilled with crushed stone and finished with approximately three inches of new concrete to meet the existing slab surface. This option is installed in buildings with poor sub-slab air flow, a competent concrete slab, and a fieldstone and/or brick foundation. Sub-slab vapors are vented through a piping network that exits the building envelope at the sill elevation and terminates above the eave line of the roof.

- Option 3 – New Slab: The new slab installation option consists of installing a new concrete slab, a sub-slab vapor barrier, and a floor venting system; applying cement stucco to the walls; and applying an epoxy vapor barrier to the new slab and stucco walls. This option is installed in buildings with poor sub-slab air flow, an incompetent concrete slab, and a fieldstone and/or brick foundation. As with Option 2, sub-slab vapors are vented through a piping network that exits the building envelope at the sill elevation and terminates above the eave line of the roof.

Table 5-1 identifies the design option for each EPEM currently installed and the primary engineering components of each.

5.2 Permits, Licenses, and Approvals (310 CMR 40.0878[3])

See Section 2.3.

5.3 Remedial Objectives

The objectives of the EPEMs are to:

- Eliminate or mitigate, to the extent feasible, the potential soil vapor migration pathway to indoor air in residential buildings.
- Achieve a condition of NSR for occupants of the residence or commercial building.

5.4 Option 1 EPEMS

Option 1 EPEMs consist of active sub-slab depressurization achieved by the installation of a radon fan and associated network of piping. Several of the Option 1 EPEMs were originally installed as Option 2 or Option 3 EPEMs; however, the concentrations of PCE measured in the post-installation indoor air did not constitute a condition of NSR and a fan was installed. Option 1 EPEMs have been installed at the following 10 properties:

- 35-37 Knowlton Street (originally Option 3)
- 31-33 Knowlton Street
- 13 Morton Street
- 18 Morton Street
- 23 Tufts Street
- 103 Washington Street
- 95 Franklin Street (originally Option 2)
- 9 Knowlton Street

- 13 Knowlton Street
- 27 Tufts Street (originally Option 3)

Because these properties require active remediation, they remain in Phase V ROS.

5.4.1 Operation and Monitoring

To confirm the performance of an EPEM, indoor air samples are collected shortly after installation is complete. For Option 1 EPEMs, following the post-installation indoor air sampling, indoor air samples are collected one time per winter for two consecutive years. Inspection and monitoring also includes measuring VOCs at sub-slab sampling points with a photoionization detector (PID), collecting pressure measurements using a manometer, and inspecting system components. If needed, repairs or modifications will be scheduled.

Post-EPEM indoor air samples were collected at three properties with an Option 1 EPEM during this reporting period:

- 13 Knowlton Street
- 35-37 Knowlton Street
- 18 Morton Street

Chemical testing results are in Tables 3-4 through 3-17, and laboratory data reports are in Appendix C. EPEM inspection logs are in Appendix E.

5.4.2 Efficiency and Effectiveness

For residential buildings, the primary goals for EPEM performance are the reduction of chlorinated VOC concentrations in indoor air to below laboratory reporting limits to the extent feasible, and to achieve a condition of NSR. For commercial buildings, the standard for successful EPEM performance is the reduction of chlorinated VOC concentrations in indoor air to that which constitutes a condition of NSR.

Through July 1, 2011, the results of post-EPEM installation indoor air sampling indicate that each of the Option 1 EPEMs installed or activated at residential and commercial properties has achieved the remedial objectives.

5.4.3 System Maintenance and Modifications

No system maintenance or modification was performed on existing Option 1 EPEMs during this reporting period. However, SSDS fans were added to the Option 2 EPEM at 95 Franklin

Street and the Option 3 EPEM at 27 Tufts Street, effectively converting them to Option 1 EPEMs.

5.4.3.1 95 Franklin Street

An Option 1 EPEM was installed at 95 Franklin Street in May 2007. Post-EPEM indoor air testing indicated that the remedial objectives were not achieved. GEI recommended modifying the EPEM to an Option 2 EPEM. The EPEM modification was completed in September 2010. GEI collected post-EPEM modification indoor air samples from 95 Franklin Street in January and March 2011. PCE was detected in the basement and on the first floor during each of these sampling events. Based on the indoor air concentrations detected at 95 Franklin Street, a condition of NSR had not been achieved.

GEI installed and connected an SSDS fan to the venting system previously installed as part of the Option 2 EPEM in April 2011, and also performed EPEM modifications to seal the chimney in the basement, which was identified as a potential vapor intrusion migration pathway. GEI collected post-EPEM installation indoor air samples, which are considered representative of the recent SSDS fan and chimney modifications, on June 23, 2011. PCE was detected at low concentrations in the basement and on the first floor.

The post-EPEM indoor air sampling results indicate that the EPEM at 95 Franklin Street has achieved a condition of NSR, and is achieving the remedial design objectives. GEI will continue to operate the SSDS fan at 95 Franklin Street under ROS, and will collect additional post-EPEM indoor air samples in winter 2012 as part of Phase V activities. GEI also anticipates recording an AUL for this property.

5.4.3.2 27 Tufts Street

An Option 3 EPEM was installed at 27 Tufts Street in September 2008. Post-EPEM indoor air testing indicated that the remedial objectives were not achieved. In light of the sampling results, GEI conducted a performance evaluation of the EPEM. GEI determined that an inaccessible crawl space beneath a portion of the residence may have been functioning as a preferred migration pathway for soil vapor. GEI therefore modified the EPEM by installing an access panel to, and a vapor barrier in, the crawl space.

Following the EPEM modification, GEI collected additional post-EPEM indoor air samples from the basement and first floor in February, March, and August 2009, and in March 2011. PCE was not detected above laboratory reporting limits in the first floor and basement samples from February and March 2009. PCE was detected in the basement only in August 2009, and in the basement and first floor in February 2011. Based on the indoor air concentrations detected at 27 Tufts Street, a condition of NSR had not been maintained..

GEI installed and connected an SSDS fan to the venting system previously installed as part of the Option 3 EPEM at 27 Tufts Street in May 2011. GEI collected additional post-EPEM installation indoor air samples on June 15, 2011, which are considered representative of the recent SSDS fan modifications. PCE was not detected in these samples.

The post-EPEM indoor air sampling results indicate that the EPEM at 27 Tufts Street is achieving the remedial design objectives. GEI will continue to operate the SSDS fan at 27 Tufts Street under ROS, and will collect additional post-EPEM indoor air samples in winter 2012 as part of Phase V activities. GEI also anticipates recording an AUL for this property.

5.4.4 Management of Waste Materials

No waste materials associated with Option 1 EPEMs were generated during the reporting period.

5.4.5 Final Inspection

The LSP-of-Record for the Site, Ileen S. Gladstone of GEI, or her representatives, inspected the Option 1 EPEMs on numerous occasions since construction and startup of the systems in 2007. The most recent round of inspections occurred during winter 2011. It is GEI's opinion that the systems were constructed and are operating in accordance with the design standards provided in the Phase IV RIP. The following is a brief summary of the installed components of each Option 1 EPEM.

5.4.5.1 35-37 Knowlton Street

35-37 Knowlton Street is a multi-family residence located approximately 450 feet northeast of the Property. In March 2007, GEI collected two sub-slab soil vapor samples from beneath the building. PCE was detected in each of these samples. GEI collected one indoor air sample from the basement of the building in January 2007. PCE was detected in this sample at a concentration above that which would constitute NSR. GEI installed an air purifier to mitigate the CEP.

Based on the indoor air and soil vapor sampling results, a vapor intrusion exposure pathway was identified at 35-37 Knowlton Street, and an Option 3 EPEM was installed in December 2008. Post-EPEM indoor air testing indicated that the remedial objectives were not achieved. GEI modified the EPEM by extending the wall vapor barrier from grade up to the sill elevation. In late August 2009, GEI further modified the EPEM and installed several small vents in the above-grade exterior brick foundation wall. In October 2009, several

additional and larger vents were installed. These additional modifications did not achieve the remedial objectives at 35-37 Knowlton Street.

In April 2010, an SSDS fan was installed in the EPEM to enhance system performance. Chlorinated VOCs have not been detected above laboratory reporting limits in the post-EPEM indoor air samples collected in March 2010 and March 2011, after the fan was installed. Based on the post-EPEM indoor air sampling results representing the current configuration of the system, the EPEM has eliminated the vapor intrusion pathway.

The post-EPEM indoor air sampling and annual monitoring have demonstrated that the EPEM at 35-37 Knowlton has been constructed in accordance with the Phase IV RIP, and has achieved the remedial design objectives. GEI will discontinue indoor air sampling at this property. GEI will continue annual monitoring including measuring VOCs at sub-slab sampling points with a PID, collecting pressure measurements using a manometer, and inspecting system components.

GEI will continue to operate the SSDS fan at 35-37 Knowlton Street under ROS. GEI also anticipates recording an AUL for this property.

5.4.5.2 31-33 Knowlton Street

31-33 Knowlton Street is a multi-family residence located approximately 400 feet east of the Property. In March 2007, GEI collected one sub-slab soil vapor sample from beneath the building. PCE was detected in this sample. GEI collected indoor air samples from the basement and first floor of the building in January and April 2007. In January 2007, PCE was detected in the basement. In April 2007, PCE was detected in the basement and on the first floor, which is a CEP. GEI installed an air purifier to mitigate the CEP.

Based on the indoor air sampling results, a vapor intrusion exposure pathway was identified at 31-33 Knowlton Street, and an Option 1 EPEM was installed in July 2007. GEI collected post-EPEM indoor air samples from the basement and first floor of the building in August 2007, November 2007, February 2008, July 2008, and January 2009. PCE was detected in the basement and on the first floor in February 2008. An additional vapor extraction point was installed and the sub-slab vapor sumps were modified in June 2008 to prevent accumulation of storm water in the sumps, which likely adversely affected sub-slab vacuum distribution. Chlorinated VOCs have not been detected above laboratory reporting limits in the post-EPEM indoor air samples collected in July 2008, June 2009, and March 2010, after the additional extraction point installation and vapor sump modification. Based on the post-EPEM indoor air sampling results representing the current configuration of the system, the EPEM has eliminated the vapor intrusion pathway.

The post-EPEM indoor air sampling and annual monitoring have demonstrated that the EPEM at 31-33 Knowlton has been constructed in accordance with the Phase IV RIP, and has achieved the remedial design objectives. GEI will discontinue indoor air sampling at this property. GEI will continue annual monitoring including measuring VOCs at sub-slab sampling points with a PID, collecting pressure measurements using a manometer, and inspecting system components.

GEI will continue to operate the SSDS fan at 31-33 Knowlton Street under ROS.

5.4.5.3 13 Morton Street

13 Morton Street is a multi-family residence located approximately 300 feet east of the Property. There is an apartment in the basement. GEI collected one sub-slab soil vapor sample from beneath the building in June 2007. PCE was detected in this sample. Based on this soil vapor result, an EPEM was recommended for the property. GEI installed an air purifier to mitigate the potential vapor intrusion pathway.

Installation of an Option 1 EPEM was completed in October 2008. Chlorinated VOCs have not been detected above laboratory reporting limits in the two rounds of post-EPEM indoor air sampling, collected in January 2009 and January 2010. Based on the post-EPEM indoor air sampling results, the EPEM has eliminated the vapor intrusion pathway.

The post-EPEM indoor air sampling and annual monitoring have demonstrated that the EPEM at 13 Morton has been constructed in accordance with the Phase IV RIP, and has achieved the remedial design objectives. GEI will discontinue indoor air sampling at this property. GEI will continue annual monitoring including measuring VOCs at sub-slab sampling points with a PID, collecting pressure measurements using a manometer, and inspecting system components.

GEI will continue to operate the SSDS fan at 13 Morton Street under ROS. GEI also anticipates recording an AUL for this property.

5.4.5.4 18 Morton Street

18 Morton Street is a multi-family residence located approximately 150 feet east of the Property. GEI collected two sub-slab soil vapor samples from beneath the building in March 2007. PCE was detected in each of these samples. Based on these soil vapor results, an EPEM was recommended. GEI installed an air purifier to mitigate the potential vapor intrusion pathway.

Installation of an Option 1 EPEM was completed in July 2007. GEI collected post-EPEM indoor air samples from the basement of the building in July 2007, November 2007,

February 2008, March 2010, and February 2011, and from the basement and first floor in January 2009. Low concentrations of PCE were detected in the basement in July 2007, March 2010, and February 2011. PCE was not detected above laboratory reporting limits in the other post-EPEM samples. Based on the indoor air sampling results, the EPEM has mitigated the vapor intrusion pathway, and achieved a condition of NSR.

The post-EPEM indoor air sampling and annual monitoring have demonstrated that the EPEM at 18 Morton Street has been constructed in accordance with the Phase IV RIP, and has achieved the remedial design objectives. GEI will discontinue indoor air sampling at this property. GEI will continue annual monitoring including measuring VOCs at sub-slab sampling points with a PID, collecting pressure measurements using a manometer, and inspecting system components.

GEI will continue to operate the SSDS fan at 18 Morton Street under ROS.

5.4.5.5 23 Tufts Street

23 Tufts Street is a single family residence located approximately 40 feet northeast of the Property. In February 2005, Shaw collected indoor air samples from the basement and first floor of the building. PCE was detected in the basement and on the first floor. GEI collected indoor air samples from the basement and first floor of the building in March 2006, June 2006, August 2006, October 2006, and December 2006. With the exception of the first floor sample collected in March 2006, PCE was detected in each sample, which is a CEP. GEI installed an air purifier to mitigate the CEP.

Based on the indoor air sampling results, a vapor intrusion exposure pathway was identified at 23 Tufts Street, and an Option 1 EPEM was installed in May 2007. GEI collected post-EPEM indoor air samples from the basement and first floor of the building in May 2007, November 2007, February 2008, January 2009, and February 2010. PCE was detected at the laboratory reporting limit in the basement in January 2009 in one duplicate sample, and below the reporting limit in the other duplicate basement sample. PCE was also detected slightly above the laboratory reporting limit on the first floor in February 2010, but was not detected in the basement in February 2010. PCE was not detected above laboratory reporting limits in the other post-EPEM samples. In light of the sampling results, GEI conducted a performance evaluation of the SSDS and confirmed that it was operating properly and was providing adequate sub-slab vacuum coverage. Based on the indoor air sampling results, the EPEM has mitigated the vapor intrusion pathway, and achieved a condition of NSR.

The post-EPEM indoor air sampling and annual monitoring have demonstrated that the EPEM at 23 Tufts Street has been constructed in accordance with the Phase IV RIP, and has achieved the remedial design objectives. GEI will discontinue indoor air sampling at this

property. GEI will continue annual monitoring including measuring VOCs at sub-slab sampling points with a PID, collecting pressure measurements using a manometer, and inspecting system components.

GEI will continue to operate the SSDS fan at 23 Tufts Street under ROS.

5.4.5.6 103 Washington Street

103 Washington Street is a commercial building located approximately 400 feet east of the Property. It is an auto repair shop. GEI collected one sub-slab soil vapor sample from beneath the building on May 8, 2007. PCE was detected in this sample. Based on this result, an EPEM was recommended. Installation of an Option 1 EPEM was completed in August 2007. GEI did not collect post-EPEM indoor air samples due to the nature of the business and the potential for the measurement of chlorinated VOCs in indoor air that are attributable to the operating business and not the disposal Site.

Annual monitoring has demonstrated that the EPEM at 103 Washington Street is generating adequate sub-slab vacuum coverage, has been constructed in accordance with the Phase IV RIP, and has achieved the remedial design objectives. GEI will continue annual monitoring including measuring VOCs at sub-slab sampling points with a PID, collecting pressure measurements using a manometer, and inspecting system components.

GEI will continue to operate the SSDS fan at 103 Washington Street under ROS.

5.4.5.7 95 Franklin Street

95 Franklin Street is a single family residence located approximately 700 feet east of the Property. In April 2007, GEI collected one sub-slab soil vapor sample from beneath the building. PCE was detected in this sample. Based on this soil vapor result, an EPEM was recommended. An air purifier was installed to mitigate the potential vapor intrusion pathway pending installation of the EPEM.

An Option 1 EPEM was installed in May 2007. GEI collected post-EPEM installation indoor air samples from the basement and first floor in June 2007. PCE was detected in the basement and first floor, which is a CEP. Based on these results, GEI re-installed an air purifier, and recommended installing an Option 2 EPEM. The homeowner signed an access agreement, but installation of the Option 2 EPEM was postponed pending a building permit being issued by the City.

The Option 2 EPEM modification was completed in September 2010. GEI collected post-EPEM modification indoor air samples from 95 Franklin Street in January and March 2011. PCE was detected in the basement and on the first floor during each of these sampling

events. GEI installed and connected an SSDS fan to the Option 2 EPEM venting system in April 2011, and also performed EPEM modifications to seal the chimney in the basement, which was identified as a potential vapor intrusion migration pathway.

GEI collected post-EPEM installation indoor air samples, which are considered representative of the recent SSDS fan and chimney modifications, on June 23, 2011. PCE was detected at low concentrations in the basement and on the first floor. Based on the indoor air sampling results, the EPEM has mitigated the vapor intrusion pathway to the extent feasible, and achieved a condition of NSR.

The post-EPEM indoor air sampling has demonstrated that the EPEM at 95 Franklin Street has been constructed in accordance with the Phase IV RIP, and is achieving the remedial design objectives. GEI will collect additional post-EPEM indoor air samples in winter 2012 in accordance with the EPEM inspection and monitoring protocols for Option 1 EPEMs. GEI will also continue annual monitoring including measuring VOCs at sub-slab sampling points with a PID, collecting pressure measurements using a manometer, and inspecting system components.

GEI will continue to operate the SSDS fan at 95 Franklin Street under ROS. GEI also anticipates recording an AUL for this property.

5.4.5.8 9 Knowlton Street

9 Knowlton Street is a multi-family residence located approximately 325 feet southeast of the Property. In February 2007, GEI collected one sub-slab soil vapor sample from beneath the building. PCE was detected in this sample. GEI collected indoor air samples from the basement and first floor of the building in May 2007. PCE was detected on the first floor and in the basement, which is a CEP. GEI installed an air purifier to mitigate the CEP.

Prior to indoor air sampling, GEI observed that the owner stored significant quantities of dry cleaning-related chemicals and solvents in the basement. The concentration of PCE measured in the basement was almost twice that measured in the soil vapor, even after the storage containers were removed from the basement. GEI therefore has concluded that the concentrations of PCE detected in indoor air are not attributable to the disposal site. However, because PCE was measured in the soil vapor beneath the building and in the groundwater in the vicinity of the property, GEI recommended installing an Option 1 EPEM.

In January 2010, an Option 1 EPEM was installed at 9 Knowlton Street. Because of the presence of dry cleaning-related chemicals in the basement, indoor air samples would not be an effective measure to confirm EPEM performance. Annual monitoring has demonstrated that the EPEM at 9 Knowlton Street is generating adequate sub-slab vacuum coverage, has

been constructed in accordance with the Phase IV RIP, and has achieved the remedial design objectives. An AUL was recorded at the Middlesex South District Registry of Deeds on September 16, 2010 requiring the maintenance of the EPEM at 9 Knowlton Street to maintain a condition of NSR. GEI will continue annual monitoring including measuring VOCs at sub-slab sampling points with a PID, collecting pressure measurements using a manometer, and inspecting system components.

GEI will continue to operate the SSDS fan at 9 Knowlton Street under ROS.

5.4.5.9 13 Knowlton Street

In June 2007, GEI collected one sub-slab soil vapor sample from beneath the building. PCE was detected in this sample. GEI collected indoor air samples from the basement and first floor of the building in August 2007, and collected an indoor air sample in the basement in November 2007. PCE was detected in the basement and on the first floor in August 2007, which is a CEP. GEI installed an air purifier to mitigate the CEP.

GEI recommended installing an Option 1 EPEM. The owner granted access to install the EPEM in winter 2010, and an Option 1 EPEM was installed in January 2010. Post-EPEM installation indoor air testing was conducted on March 3, 2010 and February 2011. PCE was not detected above laboratory reporting limits in these samples.

The post-EPEM indoor air sampling and annual monitoring have demonstrated that the EPEM at 13 Knowlton Street has been constructed in accordance with the Phase IV RIP, and has achieved the remedial design objectives. GEI will discontinue indoor air sampling at this property. GEI will continue annual monitoring including measuring VOCs at sub-slab sampling points with a PID, collecting pressure measurements using a manometer, and inspecting system components.

GEI will continue to operate the SSDS fan at 13 Knowlton Street under ROS. GEI also anticipates recording an AUL for this property.

5.4.5.10 27 Tufts Street

27 Tufts Street is a multi-family residence located approximately 40 feet northeast of the Property. In February 2005, MassDEP collected indoor air samples from the basement and first floor of the building and screened them for the presence of VOCs. PCE was not detected. Also in February 2005, Shaw collected indoor air samples from the basement and first floor of the building. PCE was not detected above laboratory reporting limits. GEI collected indoor air samples from the basement and first floor of the building in March and June 2006. In March, PCE was not detected above laboratory reporting limits. In June, PCE was detected in the basement and on the first floor. Indoor air sampling conducted in

August, September, and December 2006 at 27 Tufts Street also detected PCE in the basement and on the first floor, which is a CEP. GEI installed an air purifier to mitigate the CEP. GEI collected two sub-slab soil vapor samples from beneath the building in March 2007. PCE was detected in each sample.

Based on the sub-slab soil vapor and indoor air sampling results, a vapor intrusion pathway was identified at 27 Tufts Street, and an EPEM was recommended. Installation of an Option 3 EPEM was completed in September 2008. GEI collected post-EPEM indoor air samples from the basement and first floor of the building in September 2008 and February 2009. PCE was detected in the basement and on the first floor in February 2009.

In light of the sampling results, GEI conducted a performance evaluation of the EPEM. GEI determined that an inaccessible crawl space beneath a portion of the residence may have been functioning as a preferred migration pathway for soil vapor. GEI therefore modified the EPEM by installing an access panel to, and a vapor barrier in, the crawl space.

Following the EPEM modification, GEI collected additional post-EPEM indoor air samples from the basement and first floor in February, March, and August 2009, and in March 2011. PCE was not detected above laboratory reporting limits in the first floor and basement samples from February and March 2009. PCE was detected in the basement only in August 2009, and in the basement and first floor in February 2011. Based on the indoor air concentrations detected at 27 Tufts Street, a condition of NSR had not been achieved at 27 Tufts Street.

GEI installed an SSDS fan to the EPEM at 27 Tufts Street in May 2011. GEI collected additional post-EPEM installation indoor air samples on June 15, 2011, representative of the recent SSDS fan modifications. PCE was not detected in these samples.

The post-EPEM indoor air sampling and annual monitoring indicate that the EPEM at 27 Tufts Street has been constructed in accordance with the Phase IV RIP, and has achieved the remedial design objectives. GEI will collect additional post-EPEM indoor air samples in winter 2012 in accordance with the EPEM inspection and monitoring protocols for Option 1 EPEMs. GEI will also continue annual monitoring including measuring VOCs at sub-slab sampling points with a PID, collecting pressure measurements using a manometer, and inspecting system components.

GEI will continue to operate the SSDS fan at 27 Tufts Street under ROS. GEI also anticipates recording an AUL for this property.

5.5 Option 2 and 3 EPEMs

Option 2 and 3 EPEMs consist of passive vapor barriers and do not require mechanical operation or maintenance. Option 2 or 3 EPEMs have been installed at the following 10 properties:

- 95R Franklin Street (Option 2)
- 12 Morton Street (Option 3)
- 11 Morton Street (Option 2)
- 4 Morton Street (Option 3)
- 10 Morton Street (Option 3)
- 91-93 Franklin Street (Option 3)
- 17 Knowlton Street (Option 3)
- 32 Knowlton Street (Option 3)
- 19-19A Morton Street (Option 3)
- 166-168 Glen Street (Option 3)

In accordance with the MCP, 310 CMR 40.1000, regulatory closure has been achieved with a Class A-3 RAO-P for several properties with an Option 2 or 3 EPEM (Section 2.5). The properties that have achieved a Class A-3 RAO-P are presented in Fig. 2-1.

5.5.1 Operation and Monitoring

Operation and monitoring activities in this reporting period consisted of indoor air sampling and visual inspections. For Option 2 and 3 EPEMs, following the post-installation indoor air sampling, indoor air samples are collected 2 times per year (including one winter sample) for 2 consecutive years. The samples are analyzed for Site-specific chlorinated VOCs. During indoor air sampling, the condition of the EPEM will be inspected and, if needed, repairs or modifications will be scheduled.

Post-EPEM sampling was conducted at six properties with Option 2 or 3 EPEMs during this reporting period:

- 91-93 Franklin Street (Option 3)
- 166-168 Glen Street (Option 3)
- 17 Knowlton Street (Option 3)
- 32 Knowlton Street (Option 3)
- 10 Morton Street (Option 3)

- 19-19A Morton Street (Option 3)

Chemical testing results are in Tables 3-4 through 3-17, and laboratory data reports are in Appendix C. EPEM inspection logs are in Appendix E.

5.5.2 *Efficiency and Effectiveness*

For residential buildings, the primary goals for EPEM performance are the reduction of chlorinated VOC concentrations in indoor air to below laboratory reporting limits *to the extent feasible*, and to achieve a condition of NSR. For commercial buildings, the standard for successful EPEM performance is the reduction of chlorinated VOC concentrations in indoor air to that which constitutes a condition of NSR.

Through July 1, 2011, the results of post-EPEM installation indoor air sampling indicate that each of the 10 Option 2 or 3 EPEMs currently installed at residential properties have achieved the remedial objectives.

- A condition of NSR exists at 4 Morton Street, and the EPEM is achieving the remedial objectives. GEI has performed an additional round of confirmatory indoor air testing in July 2011; however, the indoor air testing results were not available during this reporting period. The July 2011 results will be included in the next Phase V Status Report.
- A condition of NSR exists at 19-19A Morton Street, and the EPEM is achieving the remedial objectives. During the December 2010 indoor air sampling event, the technician observed a small crack in the epoxy along the floor-wall interface in the basement. Additional epoxy was applied to the crack in March 2011, and indoor air samples were collected from the basement and first floor in April 2011. PCE was not detected on the first floor, but was detected at low concentrations in the basement. Based on the indoor air sampling results, a condition of NSR exists at 19-19A Morton Street, and the EPEM is achieving the remedial objectives. GEI will collect one additional sample in winter 2012 to continue to confirm the EPEM's effectiveness.
- A condition of NSR exists at 10 Morton Street. PCE has not been detected during the five rounds of post-EPEM indoor air sampling. GEI collected indoor air samples from the basement and first floor in March 2011. TCE was not detected on the first floor, but was detected at low concentrations in the basement. Based on the indoor air sampling results, a condition of NSR exists at 10 Morton Street, and the EPEM is achieving the remedial objectives. A sufficient number of indoor air samples have been collected from 10 Morton Street; therefore, GEI will discontinue indoor air sampling and submit a Class A-3 RAO-P.

5.5.3 System Maintenance and Modifications

As discussed in Section 5.4.3, SSDS fans were added to the Option 2 EPEM at 95 Franklin Street and the Option 3 EPEM at 27 Tufts Street during this reporting period.

5.5.4 Management of Waste Materials

No waste materials associated with Option 2 or 3 EPEMs were generated during the reporting period.

5.5.5 Final Inspection

The LSP-of-Record for the Site, Ileen S. Gladstone of GEI, or her representatives, inspected the Option 2 and 3 EPEMs on numerous occasions since construction and startup of the systems in 2007. The most recent round of inspections occurred during winter 2011. It is GEI's opinion that the systems were constructed in accordance with the design standards provided in the Phase IV RIP. The following is a brief summary of the installed components of the Option 2 or 3 EPEM at each property.

5.5.5.1 95R Franklin Street

95R Franklin Street is a single-family residence located approximately 575 feet east of the Property. In March 2007, GEI collected a sub-slab soil vapor sample from beneath the building. PCE was detected in this sample. GEI collected indoor air samples from the first floor and basement in April 2007. PCE was detected in each of these samples, which is a CEP. GEI installed an air purifier to mitigate the CEP.

Based on the indoor air and soil vapor sampling results, a vapor intrusion pathway was identified at 95R Franklin Street, and an Option 1 EPEM was installed in the basement and crawl space in May 2007. GEI collected post-EPEM installation indoor air samples from the crawl space and first floor in June 2007 and from the first floor and basement in August 2007. PCE was detected in all of these samples.

An Option 2 EPEM was then installed in December 2007. GEI collected post-EPEM indoor air samples from the basement and first floor on December 23 and December 28, 2007, in April 2009, and in March 2010. PCE was not detected above laboratory reporting limits in these samples. Based on the post-EPEM indoor air sampling results, the EPEM has eliminated the vapor intrusion pathway. An AUL was recorded at the Middlesex South District Registry of Deeds on November 19, 2009 requiring the maintenance of the EPEM at 95R Franklin Street to maintain a condition of NSR.

The post-EPEM indoor air sampling and visual inspections have confirmed that the EPEM at 95R Franklin Street has been constructed in accordance with the Phase IV RIP, and has achieved the remedial design objectives. GEI has discontinued indoor air sampling at this property. GEI will conduct annual inspections of the EPEM.

GEI submitted a Class A-3 RAO-P for 95R Franklin Street on April 30, 2010.

5.5.5.2 12 Morton Street

12 Morton Street is a multi-family residence located approximately 150 feet east of the Property. GEI collected one sub-slab soil vapor sample from beneath the building in May 2007. PCE was detected in this sample. Based on this soil vapor result, an EPEM was recommended. GEI installed an air purifier to mitigate the potential vapor intrusion pathway.

Installation of an Option 3 EPEM was completed in March 2008. GEI collected post-EPEM indoor air samples from the first floor and basement on March 5 and March 21, 2008, in April 2009, and in March and November 2010. PCE was not detected above laboratory reporting limits in these samples. PCE was detected at the reporting limit in the basement sample collected in March 2010. Based on the indoor air sampling results, the EPEM has mitigated the vapor intrusion pathway, and achieved a condition of NSR. An AUL was recorded at the Middlesex South District Registry of Deeds on November 19, 2009 requiring the maintenance of the EPEM at 12 Morton Street to maintain a condition of NSR.

The post-EPEM indoor air sampling and visual inspections have confirmed that the EPEM at 12 Morton has been constructed in accordance with the Phase IV RIP, and has achieved the remedial design objectives. GEI has discontinued indoor air sampling at this property. GEI will conduct annual inspections of the EPEM.

5.5.5.3 11 Morton Street

11 Morton Street is a multi-family residence located approximately 300 feet east of the Property. In March 2007, GEI collected two sub-slab soil vapor samples from beneath the building. PCE was detected in each of these samples. GEI collected indoor air samples from the basement and first floor in June 2007. PCE was detected in the basement and on the first floor, which is a CEP. GEI installed an air purifier to mitigate the CEP.

Based on the indoor air and soil vapor sampling results, a vapor intrusion exposure pathway was identified at 11 Morton Street, and an Option 2 EPEM was installed in September 2008. GEI collected post-EPEM indoor air samples from the basement and first floor in October 2008, January and August 2009, and February 2010. PCE was not detected above laboratory reporting limits in these samples. TCA was detected at low concentrations on the first floor in February 2010, but was not detected in the basement. Based on the indoor air

sampling results, the EPEM has mitigated the vapor intrusion pathway, and achieved a condition of NSR. An AUL was recorded at the Middlesex South District Registry of Deeds on April 16, 2010 requiring the maintenance of the EPEM at 11 Morton Street to maintain a condition of NSR.

The post-EPEM indoor air sampling and visual inspections have confirmed that the EPEM at 11 Morton has been constructed in accordance with the Phase IV RIP, and has achieved the remedial design objectives. GEI has discontinued indoor air sampling at this property. GEI will conduct annual inspections of the EPEM.

5.5.5.4 4 Morton Street

4 Morton Street is a multi-family residence located approximately 200 feet east of the Property. In June 2007, GEI collected one sub-slab soil vapor sample from beneath the building. PCE was detected in this sample. Based on this soil vapor result, an EPEM was recommended. GEI installed an air purifier to mitigate the potential vapor intrusion pathway.

Installation of an Option 3 EPEM was completed in January 2009. GEI collected post-EPEM indoor air samples from the first floor and basement in March 2009. PCE was detected in the basement.

Based on the post-EPEM indoor air analytical results, the EPEM was modified to extend the wall vapor barrier from grade up to the sill elevation. Post-EPEM indoor air samples were collected from the basement and first floor in August 2009, and in March and December 2010 to confirm the effectiveness of the EPEM modification. PCE was detected in these basement samples, but not on the first floor. The basement ceiling height at 4 Morton Street is less than 7 feet (6'4"). The basement is used for storage only, and there is no evidence that the basement is used as living or working space. Consistent with current MassDEP guidance, since PCE has only been detected in the basement, and not in any living space, the CEP has been eliminated at 4 Morton Street, and a condition of NSR has been achieved. GEI performed an additional round of confirmatory indoor air testing in July 2011; however, the indoor air testing results were not available during this reporting period. The July 2011 results will be included in the next Phase V Status Report.

5.5.5.5 10 Morton Street

10 Morton Street is a single-family residence located approximately 150 feet east of the Property. In May 2009, GEI collected two sub-slab soil vapor samples from beneath the building. PCE was detected in one sample. GEI collected indoor air samples from the basement and first floor in August and November 2007, and February 2008. PCE was

detected in the basement in August 2007, and on the first floor and in the basement in February 2008, which is a CEP. GEI installed an air purifier to mitigate the CEP.

Based on the indoor air sampling results, a vapor intrusion exposure pathway was identified at 10 Morton Street, and an Option 3 EPEM was installed in March 2009. GEI collected post-EPEM indoor air samples from the basement and first floor in April 2009, in February, November, and December 2010, and in March 2011. PCE was not detected above laboratory limits in these samples. TCE was detected at low concentrations in the basement and first floor in November 2010, and in the basement only in December 2010 and March 2011. Based on the indoor air sampling results, the EPEM has mitigated the vapor intrusion pathway, and achieved a condition of NSR. An AUL was recorded at the Middlesex South District Registry of Deeds on January 15, 2010 requiring the maintenance of the EPEM at 10 Morton Street to maintain a condition of NSR.

The post-EPEM indoor air sampling and visual inspections have confirmed that the EPEM at 10 Morton has been constructed in accordance with the Phase IV RIP, and has achieved the remedial design objectives. GEI has discontinued indoor air sampling at this property. GEI will conduct annual inspections of the EPEM.

5.5.5.6 91-93 Franklin Street

91-93 Franklin Street is a multi-family residence located approximately 700 feet east of the Property, abutting the Capuano Center to the south. GEI collected indoor air samples from the first floor and basement in February 2007. PCE was detected in the basement, which is a CEP, but was not detected in the first floor above laboratory reporting limits. GEI installed an air purifier to mitigate the CEP. In March 2007, GEI collected a sub-slab soil vapor sample at 91-93 Franklin Street. PCE was detected in this sample.

Based on the indoor air and soil vapor sampling results, a vapor intrusion pathway was identified at 91-93 Franklin Street, and an Option 3 EPEM was installed in March 2009. GEI collected post-EPEM indoor air samples from the first floor and basement in April 2009, March and December 2010, and February 2011. PCE was not detected above laboratory reporting limits in these samples. Based on the indoor air sampling results, the EPEM has eliminated the vapor intrusion pathway. An AUL will be recorded at the Middlesex South District Registry of Deeds requiring the maintenance of the EPEM at 91-93 Franklin Street to maintain a condition of NSR.

The post-EPEM indoor air sampling and visual inspections have confirmed that the EPEM at 91-93 Franklin Street has been constructed in accordance with the Phase IV RIP, and has achieved the remedial design objectives. GEI will collect additional post-EPEM indoor air

samples in winter 2012 in accordance with the EPEM inspection and monitoring protocols for Option 3 EPEMs.

GEI will submit a Class A-3 RAO-P for 91-93 Franklin once the AUL is recorded.

5.5.5.7 17 Knowlton Street

17 Knowlton Street is a multi-family residence located approximately 350 feet southeast of the Property. In June 2007, GEI collected two sub-slab soil vapor samples from beneath the building. PCE was detected in each of these samples. GEI collected indoor air samples from the basement and first floor of the building in October 2007. PCE was detected in the basement and on the first floor, which is a CEP. GEI installed an air purifier to mitigate the CEP.

Based on the indoor air and soil vapor sampling results, a vapor intrusion exposure pathway was identified at 17 Knowlton Street, and an Option 3 EPEM was installed in April 2009. GEI collected post-EPEM indoor air samples from the basement and first floor in May and June 2009, November 2010, and February 2011. PCE was detected on the first floor in May 2009 and in the basement in February 2011 at low concentrations. Based on the indoor air sampling results, the EPEM has mitigated the vapor intrusion pathway, and achieved a condition of NSR. An AUL was recorded at the Middlesex South District Registry of Deeds on March 5, 2010 requiring the maintenance of the EPEM at 17 Knowlton Street to maintain a condition of NSR.

The post-EPEM indoor air sampling and visual inspections have confirmed that the EPEM at 17 Knowlton Street has been constructed in accordance with the Phase IV RIP, and has achieved the remedial design objectives. GEI will collect additional post-EPEM indoor air samples in winter 2012 in accordance with the EPEM inspection and monitoring protocols for Option 3 EPEMs.

5.5.5.8 32 Knowlton Street

32 Knowlton Street is a multi-family residence located approximately 325 feet northeast of the Property. GEI collected indoor air samples from the first floor and basement of the building in October 2008 and January 2009. PCE was detected in January 2009 in the basement and first floor, which is a CEP. GEI installed an air purifier to mitigate the CEP.

Based on the indoor air sampling results, a vapor intrusion exposure pathway was identified at 32 Knowlton Street, and an Option 3 EPEM was installed in July 2009. GEI collected post-installation indoor air samples in July 2009, January and November 2010, and March 2011. PCE was not detected above laboratory reporting limits in these samples. Based on the post-EPEM indoor air sampling results, the EPEM has eliminated the vapor intrusion

pathway. An AUL was recorded at the Middlesex South District Registry of Deeds on March 29, 2010, requiring the maintenance of the EPEM at 32 Knowlton Street to maintain a condition of NSR.

The post-EPEM indoor air sampling and visual inspections have confirmed that the EPEM at 32 Knowlton has been constructed in accordance with the Phase IV RIP, and has achieved the remedial design objectives. GEI has discontinued indoor air sampling at this property. GEI will conduct annual inspections of the EPEM.

5.5.5.9 19-19A Morton Street

19-19A Morton Street is a multi-family residence located approximately 300 feet east of the Property. In April 2007, GEI collected two sub-slab soil vapor samples from beneath the building. PCE was detected in one sample. GEI collected indoor air samples from the basement and first floor of the building in July 2007, April and August 2008, and January 2009. PCE was detected in the basement and on the first floor in January 2009, which is a CEP. GEI installed an air purifier to mitigate the CEP.

Based on the indoor air results, a vapor intrusion exposure pathway was identified at 19-19A Morton Street, and an Option 3 EPEM was installed in August 2009. GEI collected post-EPEM indoor air samples from the first floor and basement in September 2009, January and December 2010, and April 2011. During the December 2010 indoor air sampling event, the technician observed a small crack in the epoxy along the floor-wall interface in the basement. Additional epoxy was applied to the crack in March 2011, and indoor air samples were collected from the basement and first floor in April 2011. PCE was detected at low concentrations in the basement and on the first floor in December 2010, and in the basement only in April 2011, after the epoxy application. Based on the indoor air sampling results, the EPEM has mitigated the vapor intrusion pathway, and achieved a condition of NSR. An AUL was recorded at the Middlesex South District Registry of Deeds on January 15, 2010 requiring the maintenance of the EPEM at 19-19A Morton Street to maintain a condition of NSR.

The post-EPEM indoor air sampling and visual inspections have confirmed that the EPEM at 19-19A Morton Street has been constructed in accordance with the Phase IV RIP, and has achieved the remedial design objectives. GEI will collect additional post-EPEM indoor air samples in winter 2012 in accordance with the EPEM inspection and monitoring protocols for Option 3 EPEMs.

5.5.5.10 166-168 Glen Street

166-168 Glen Street is a multi-family residence located approximately 150 feet northeast of the Property. In May 2007, GEI collected two sub-slab soil vapor samples from beneath the building. PCE was detected in both samples. GEI collected indoor air samples from the basement and first floor in September 2007. PCE was detected in the basement and on the first floor, which is a CEP. GEI installed an air purifier to mitigate the CEP.

Based on the indoor air and soil vapor sampling results, a vapor intrusion pathway was identified at 166-168 Glen Street, and an EPEM was recommended. EPEM installation was postponed pending access and installation authorization from the property owners. In November 2010, an Option 3 EPEM was installed at 166-168 Glen Street. Post-EPEM installation indoor air samples were collected in the basement and on the first floor in November 2010 and February 2011. PCE was not detected above laboratory reporting limits in these samples. Based on the indoor air sampling results, the EPEM has eliminated the vapor intrusion pathway. An AUL was recorded at the Middlesex South District Registry of Deeds on February 11, 2011 requiring the maintenance of the EPEM at 166-168 Glen Street to maintain a condition of NSR.

The post-EPEM indoor air sampling and visual inspections have confirmed that the EPEM at 166-168 Glen Street has been constructed in accordance with the Phase IV RIP, and has achieved the remedial design objectives. In accordance with post-installation operation and monitoring protocols associated with Option 3 EPEMs, GEI will collect additional indoor air samples in fall 2011 and winter 2012 to continue to confirm the EPEM's effectiveness.

5.6 Activity and Use Limitations

It is anticipated that AULs will be recorded for each property where an Option 2 or 3 EPEM is installed and for some of the properties where an Option 1 EPEM is installed. The AUL protects the integrity of the EPEM and provides for ongoing monitoring to confirm EPEM effectiveness.

During the reporting period, an AUL was recorded for the property at 166-168 Glen Street.

5.7 Properties with Insufficient Rounds of Sampling

5.7.1 Complete Vapor Intrusion Pathway which Constitutes NSR

Further assessment was performed during this reporting period at 117 Washington Street, where limited indoor air testing has been conducted and chlorinated VOCs have been

detected above laboratory reporting limits, but only at concentrations that constitute a condition of NSR.

The building at 117 Washington Street is currently unoccupied and under construction. GEI collected indoor air samples from the first floor and basement in September 2009, and from the first floor in March 2011. PCE was not detected in September 2009, but was detected at a low concentration in March 2011. Because the building is not occupied the vapor intrusion pathway is not complete. If the building were occupied for residential use, the concentrations of PCE detected in the building would still constitute a condition of NSR. Accordingly, an EPEM is not required at 117 Washington Street. GEI will collect one additional round of indoor air samples to confirm air quality results over multiple seasons. .

5.8 Ongoing Phase V Activities

5.8.1 EPEM Operation and Monitoring

GEI will continue to monitor the Option 1 EPEMs (SSDSs) in residential and commercial buildings, including measuring VOCs at sub-slab sampling points with a PID, collecting pressure measurements using a manometer, and collecting indoor air samples once per year for 2 years following system installation. Following the completion of 2 years of annual winter indoor air sampling, GEI will discontinue indoor air sampling.

GEI will continue to monitor the Option 2 and 3 EPEMs in residential buildings, including inspecting system components and collecting indoor air samples twice per year for 2 years following system installation. One of the two annual indoor air samples will be collected in the winter. Following the completion of 2 years of annual winter indoor air sampling, and the achievement of a Class A-3 RAO-P, GEI will discontinue indoor air sampling and continue to conduct annual inspections of the system components.

The proposed indoor air sampling and OMM schedule through winter 2012 for each of the properties where an EPEM has been installed is presented in Table 5-2.

5.8.2 EPEM Modifications

GEI does not anticipate EPEM modifications during the next reporting period.

5.8.3 Installation of New EPEMs

GEI does not anticipate the installation of new EPEMs during the next reporting period.

5.8.4 Indoor Air Sampling

As discussed above, GEI will continue to conduct indoor air sampling at certain residences and commercial buildings, in accordance with the sampling schedule presented in Table 5-2.

5.8.5 AULs and RAOs

As discussed in Section 2.5, the source of contamination at the Site has been controlled. If 2 years of post-installation indoor air sampling demonstrates that an Option 2 or Option 3 EPEM continues to achieve the remedial objectives, then the EPEM property is eligible for a Class A-3 RAO-P Statement.

GEI anticipates recording AULs for each property where an Option 2 or 3 EPEM is installed and for some of the properties where an Option 1 EPEM is installed. The AUL protects the integrity of the EPEM and provides for ongoing monitoring to confirm EPEM effectiveness. Once AULs are recorded, GEI will prepare a Class A-3 RAO-P for properties with Option 2 or 3 EPEMs.

Properties with an Option 1 EPEM will be in ROS. GEI will prepare Class B-1 RAO-Ps for those properties that did not require mitigation.

6. 60 Tufts Street Phase IV Activities and Final Inspection

6.1 Introduction

60 Tufts Street is a 17-unit condominium building adjacent to the Property. The remedial system at 60 Tufts Street was designed and constructed as an SSDS. The SSDS includes 13 vertical sub-slab extraction points and 2 horizontal foundation wall extraction points connected to 2 collection headers and a 5-horsepower regenerative blower with pressure gauges, controls, and particulate filter housed in a locked metal enclosure. GEI began operation of the SSDS on April 24, 2009. A discharge pipe extends from the blower through a parking garage deck and discharges above the roofline of the building.

The system does not include off-gas treatment. Based upon the measured flow rate and VOC concentrations, the annual discharge rate of VOCs from the system will be significantly less than 100 lbs per year; therefore, no off-gas treatment is required per MassDEP Policy No. WSC-94-150.

6.2 Permits, Licenses, and Approvals (310 CMR 40.0878[3])

See Section 2.3.

6.3 Remedial Objectives

The objectives of the SSDS at 60 Tufts Street are to:

- Eliminate or mitigate, to the extent feasible, the potential soil vapor migration pathway to indoor air.
- Achieve a condition of NSR for occupants of the condominium building.

6.4 Efficiency and Effectiveness

The SSDS monitoring data show that the sub-slab vacuum field generated by the SSDS influences nearly the entire floor slab area. Indoor air samples have been collected in Units 1, 4, and 5, which are the units closest to the ground floor, for 2 years since EPEM installation. The indoor air testing results indicate that a condition of NSR has been achieved for building occupants at 60 Tufts Street and the CEP has been mitigated to the extent feasible.

6.5 Operation and Monitoring

The system has been monitored in accordance with the requirements and schedule in the Phase IV RIP. Operational parameters for the system (e.g., flow rate, vacuum) are monitored monthly and indoor air quality in Units 1, 4, and 5 and sub-slab conditions have been monitored for 2 years following installation of the EPEM. The Phase IV RIP provides for ongoing annual indoor air sampling. However, post-EPEM indoor air sampling and visual inspections have confirmed that the EPEM at 60 Tufts Street has been constructed in accordance with the Phase IV RIP, and has achieved the remedial design objectives. Accordingly, GEI will discontinue indoor air sampling (Section 6.9).

During this reporting period, 24-hour indoor air samples were collected from Units 1, 4 and 5. The sampling results are presented in Table 3-16. A summary of monitoring activities is provided in Table 6-1 and Field Monitoring Forms are provided in Appendix E.

6.5.1 Unit 1

One indoor air sample was collected from Unit 1 on February 5, 2011. PCE was not detected above laboratory reporting limits in this sample. GEI will discontinue indoor air sampling in Unit 1, and will continue sub-slab pressure measurements to demonstrate continued EPEM effectiveness.

6.5.2 Unit 4

Two indoor air samples were collected from the basement and first floor of Unit 4 on February 5, 2011. PCE was not detected above laboratory reporting limits in these samples. GEI will discontinue indoor air sampling in Unit 4, and will continue sub-slab pressure measurements to demonstrate continued EPEM effectiveness.

6.5.3 Unit 5

One indoor air sample was collected from Unit 5 on March 8, 2011. PCE was not detected above laboratory reporting limits in this sample. GEI will discontinue indoor air sampling in Unit 5, and will continue sub-slab pressure measurements to demonstrate continued EPEM effectiveness.

6.6 Management of Waste Materials

Infrequently, condensate in system piping may accumulate in the cleanout drains for the sub-surface header pipes, or the moisture separator installed as part of the blower assembly. If

observed, the liquid will be drained and dispensed to the bare ground surface at 60 Tufts Street so that it can infiltrate into the subsurface within the Site boundary.

6.7 System Maintenance and Modifications

No modifications were made to the system during the last reporting period.

6.8 Final Inspection

The LSP-of-Record for the Site, Ileen S. Gladstone of GEI, or her representatives, inspected the 60 Tufts SSDS on numerous occasions since start-up in 2009. The most recent inspection was on June 13, 2011. It is GEI's opinion that the system was constructed and is operating in accordance with the design standards provided in the Phase IV RIP.

6.9 Ongoing Phase V ROS Activities (Modification of Phase IV RIP)

Given that it has been determined that the system is achieving its remedial design objectives and the CEP has been mitigated (Section 6.4), GEI will discontinue indoor air sampling and conduct solely maintenance monitoring of the system.

To confirm system performance, GEI will continue to monitor operational parameters and sub-slab conditions for the system (e.g., flow rate, vacuum) on a monthly basis. During monthly monitoring events, GEI will also perform maintenance tasks which may include documenting whether the blower is operating normally and if alarm conditions are present, draining accumulated water from the moisture separator or collection headers, changing the filter element for the blower, changing the batteries in the auto-dialer, and correcting deficiencies observed during routine inspection of system components.

7. 50 Tufts Street Phase IV Activities and Final Inspection

7.1 Introduction

The remedial system at the Property was originally designed and constructed as an SSDS that includes 22 sub-slab extraction points inside the building, a 15-horsepower regenerative blower with pressure gauges, controls, and particulate filter, and three 2,000-lb activated carbon adsorbers operated in series for off-gas treatment. As part of the SSDS installation, the building slab was sealed to minimize vapor transmission through the slab. The cracks and joints in the building slab were filled with flexible sealant and a two-part epoxy coating was applied to the surface of the slab. GEI began operating the SSDS on April 30, 2007.

In July and August 2007, SVE components were added to the system as part of the CRA to address residual VOCs in soil. The SVE system includes seven SVE points installed below the pavement in the north and south parking lots on the Property. The SSDS and the SVE system rely upon shared equipment, including the piping manifold, blower assembly, and off-gas treatment units. GEI began operating the SVE system on August 22, 2007.

7.2 Permits, Licenses, and Approvals (310 CMR 40.0878[3])

See Section 2.3.

7.3 Remedial Objectives

The objectives of the combined SSDS/SVE system are to:

- Eliminate or mitigate, to the extent feasible, the soil vapor migration pathway to indoor air.
- Achieve a condition of NSR for a hypothetical, commercial full-time worker.
- Reduce the mass of contaminants in the vadose zone.
- Control the potential migration of soil vapor from the Property to the 60 Tufts Street property.

7.4 Efficiency and Effectiveness

The SSDS monitoring data show that the sub-slab vacuum field generated by the SSDS covers most of the building slab area. In conjunction with the physical sealing of the slab,

this indicates the soil vapor migration pathway to indoor air is being mitigated by the system. Based on indoor air testing results collected since the combined system has been in operation, a condition of NSR for full-time commercial workers has been achieved for the building at the Property.

The SVE system monitoring data show that vacuum influence from the SVE points in the south parking lot extends approximately 30 feet south from the building and from the SVE points in the north parking lot extends onto the 60 Tufts Street property.

Three influent and two effluent samples from the carbon treatment system were collected and compared with PID field measurements to estimate the total mass of VOCs removed from soil vapor since April 30, 2007. Monitoring data from both the SSDS and SVE components through June 13, 2011 show that approximately 6,921 lbs of VOCs have been removed from the vadose zone at the Property (Fig. 7-1). The total volume of VOCs removed through June 13, 2011 was approximately 514 gallons.

7.5 Operation and Monitoring

The system has been monitored in accordance with the requirements and schedule in the Phase IV RIP. Operational parameters for the system (e.g., flow rate, vacuum, off-gas treatment efficiency) are monitored monthly. Carbon change-outs are scheduled based on carbon tank monitoring data in order to maximize VOC adsorption and prevent discharge of VOCs to the atmosphere. A summary of monitoring activities during this reporting period is provided in Table 7-1, and Field Monitoring Forms are provided in Appendix E.

The building was vacant during the reporting period. However, based on indoor air testing results collected since the combined system has been in operation, a condition of NSR has been achieved for the building at the Property for full-time commercial workers under future conditions if the building becomes occupied. The system is achieving the remedial objectives; therefore, GEI has discontinued indoor air sampling, and no indoor air sampling was conducted during this reporting period.

GEI also measures the vapor pressure of sub-slab extraction points and monitoring points. GEI uses these sub-slab pressure measurements to confirm system effectiveness.

The pipe and hose connections on the pressure side of the blower are examined during monitoring visits for leaks. Leaks, if encountered, are corrected immediately. Procedures to address spills of spent activated carbon during carbon change-outs have been developed and are presented in the system OMM Plan provided in the Phase IV RIP.

7.6 Management of Waste Materials

Infrequently, condensate in system piping may accumulate in the moisture separator installed as part of the blower assembly. If observed, the liquid is drained from the moisture separator and dispensed to the bare ground surface at the Property so that it can infiltrate into the subsurface within the Site boundary.

Based on the previous quantities of spent carbon generated by the system, a 2009 Hazardous Waste Report was submitted to MassDEP on March 1, 2010, identifying the Property as a Large Quantity Generator (LQG) facility. GEI operated the system as a LQG in 2010, and anticipates operating as a LQG in 2011.

Remediation waste generated during this reporting period consisted of 5,100 lbs of spent activated carbon. A carbon change-out occurred on March 18, 2011 and the spent carbon was delivered to Rineco Chemical Industries, Inc. (Rineco) of Benton, Arkansas for use by cement kilns as a waste-derived fuel. Disposal documentation for this reporting period is in Appendix F.

7.7 System Maintenance and Modifications

In December 2010, GEI performed a diagnostic test on the SSDS and SVE systems to evaluate system performance under reduced flow conditions. The diagnostic test was performed prior to the planned installation of a variable frequency drive that will be used to reduce the blower speed. The blower has been operating at full speed since the SSDS started in April 2007. Data from the diagnostic test included sub-slab and soil vapor pressure readings under various flow conditions and was recorded on Monthly Monitoring Forms provided in Appendix E. The data will be used to identify the optimal blower frequency that minimizes energy consumption and maintains adequate sub-slab and soil vapor vacuum influence in order to protect indoor air quality and achieve mass removal. The blower frequency will be optimized during the next reporting period.

On March 18, 2011, Carbon Filtration Systems, Inc. (CFS) of Johnston, Rhode Island performed a carbon change-out of Tanks B and C. CFS found that the Tank C inlet pipe was crushed, resulting in reduced air flow through the tank. Tank C was removed from service pending repairs at a later date. Tank B was refilled with 2,000 lbs of carbon. The system is currently operating with Tanks A and B in service.

7.8 Final Inspection

The LSP-of-Record for the Site, Ileen S. Gladstone of GEI, or her representatives, inspected the 50 Tufts SSDS and SVE systems on multiple occasions since start-up in April 2007. The

most recent inspection was on June 13, 2011. It is GEI's opinion that the system was constructed and is operating in accordance with the design standards provided in the Phase IV RIP.

7.9 Ongoing Phase V ROS Activities

The system is achieving the remedial design objectives and Phase V ROS OMM activities will continue in accordance with the requirements and schedule set forth in the Phase IV RIP.

8. Monitored Natural Attenuation

8.1 MNA Program Objectives

MNA is part of the remedial strategy to reach a Permanent Solution for the Site. GEI has implemented an MNA program to confirm on-going natural attenuation is occurring at the Site. The MNA program is described in the MNA OMM Plan presented in the Phase IV RIP. The primary elements of the MNA program include:

- Plume Stability Monitoring: A groundwater sampling plan to monitor overburden and bedrock groundwater plume concentrations through time to confirm that the groundwater plumes are stable, and that groundwater concentrations of chlorinated VOCs are not significantly increasing.
- Natural Attenuation Evaluation: An evaluation of overburden and bedrock groundwater plume concentrations through time for indications of the presence and rate of natural attenuation processes.

8.2 MNA Activities

GEI conducted the following MNA activities during the reporting period:

- Groundwater Level Measurements: GEI measured groundwater levels at monitoring wells shown in Table 8-1.
- Groundwater Sampling: GEI collected groundwater samples from 20 monitoring wells in April 2011, and submitted them to Accutest for chemical testing for VOCs by EPA Method 8260B. Groundwater samples from a subset of wells were also analyzed for natural attenuation parameters. The sampling locations are shown in Fig. 3-1, the chemical testing results are shown in Table 3-2, and the laboratory data reports are in Appendix C.

GEI evaluated the groundwater chemical testing results collected during MNA activities to update and supplement the plume stability monitoring and natural attenuation evaluation. During this reporting period, semi-annual groundwater sampling was conducted at 20 monitoring wells shown in Fig. 3-1. GEI has been monitoring recent fluctuations in groundwater concentrations in monitoring wells MW122 and MW112A. Groundwater concentrations decreased slightly in MW112A, and have stabilized in MW122 and are within a range of fluctuation that is consistent with continuing plume stability, particularly when

considered in context with prior groundwater results from all monitoring wells. GEI will perform additional groundwater sampling in fall 2011.

Based on our analysis of the Mann-Kendall statistical trend test results, which incorporates the additional groundwater testing data, in general the PCE, TCE, and TCA groundwater plumes continue to be stable or slightly decreasing. The stable and decreasing trends of VOC concentrations are evidence that natural attenuation is likely occurring at the Site.

9. Remedial Monitoring Report No. 15

RMR No. 15, documenting OMM activities for active remedial systems at the Site, is presented in the BWSC-108A and 108B Transmittal Forms in Appendix A.

10. Phase V ROS Submittal

10.1 Introduction

As described in the Phase III RAP, the selected remedy includes:

- Implementation of EPEMs to address the vapor intrusion pathway and achieve NSR in residences and commercial buildings beyond the Property boundaries.
- Implementation and operation of the SSDS and SVE systems at the Property.
- MNA program.

The above remedies are collectively known as the CRA.

The effectiveness of the CRA relies, in part, upon the active operation and maintenance of the existing commercial and residential EPEMs, and the SSDS and SVE system at the Property, for the purpose of achieving a Permanent Solution pursuant to 310 CMR 40.0890. Therefore, it is GEI's opinion that ROS as defined by the MCP (310 CMR 40.0893[1]) applies to the operation of the selected CRA. Table 5-1 summarizes active EPEMs that will be operated under Phase V ROS until a Permanent Solution is achieved.

10.2 Regulatory Framework

In accordance with 310 CMR 40.0893(2), to achieve and maintain Phase V ROS for a disposal site:

- Construction and implementation of the CRA has been completed in accordance with the Phase IV RIP and is meeting project design standards to achieve a Permanent Solution.
- Remedial systems shall be operated and maintained in accordance with the requirements of 310 CMR 40.0890.
- Each source of OHM shall be eliminated or controlled in accordance with 310 CMR 40.1003(5).
- Any substantial hazard shall be eliminated.
- At a minimum, information and data on OMM shall be gathered and submitted to MassDEP every 6 months in a report as described in 310 CMR 40.0892.

10.3 LSP Opinion

It is GEI's opinion that the Site meets the above requirements for conducting Phase V ROS activities:

- A final inspection has been performed and confirmed that the CRA has been constructed and implemented in accordance with the Phase IV RIP and is meeting project design standards to achieve a Permanent Solution. .
- An MNA plan is in place and is being implemented.
- The Phase II/Phase III reports demonstrated that each source of OHM is controlled at the Site. Residual DNAPL is not migrating, and the dissolved-phase groundwater plumes are stable and are not causing an increase in concentrations of VOCs in groundwater, soil, soil vapor, or indoor air.
- Any substantial hazards have been eliminated as documented in the Substantial Hazard Evaluation (SHE) completed by ARCADIS U.S., Inc. (ARCADIS) of Chelmsford, Massachusetts in August 2011. A copy of the SHE is provided in Appendix G.

In accordance with 310 CMR 40.0892(3)(c), while operating under ROS, information and data on OMM will be gathered and submitted to MassDEP every 6 months in Phase V Status Reports and RMRs on a schedule consistent with that established for Phase IV Status Reports.

11. References

MassDEP (1994). “Off-gas Treatment of Point-Source Remedial Air Emissions,” Massachusetts Department of Environmental Protection, Policy #WSC-94-150, dated 1994.

GEI (2006). IRA Status Report No. 1, 50 Tufts Street, Somerville, MA, RTNs 3-23246, 3-24358 and 3-24376, dated May 8, 2006.

GEI (2006). IRA Status Report No. 2 and Plan Modification No. 3, 50 Tufts Street, Somerville, MA, RTN 3-23246, dated November 13, 2006.

GEI (2007). IRA Plan Modification No. 4, 50 Tufts Street, Somerville, MA, RTNs 3-23246 and 3-26114, dated February 22, 2007.

GEI (2007). IRA Plan Modification No. 1, 50 Tufts Street, Somerville, MA, RTN 3-26114, dated April 12, 2007.

GEI (2007). IRA Plan Modification No. 5, 50 Tufts Street, Somerville, MA, RTN 3-23246, dated May 5, 2007.

GEI (2007). IRA Status Report No. 3, 50 Tufts Street, Somerville, MA, RTN 3-23246 & IRA Status Report No. 1 RTN 3-26114, dated May 10, 2007.

GEI (2007). Remedial Monitoring Report No. 1, 50 Tufts Street, Somerville, MA, RTN 3-23246, dated August 30, 2007.

GEI (2007). Monthly Remedial Monitoring Report No. 2, 50 Tufts Street, Somerville, MA, RTN 3-23246, dated August 30 2007.

GEI (2007). Monthly Remedial Monitoring Report No. 3, 50 Tufts Street, Somerville, MA, RTN 3-23246, dated August 30, 2007.

GEI (2007). Monthly Remedial Monitoring Report No. 4, 50 Tufts Street, Somerville, MA, RTN 3-23246, dated August 30, 2007.

GEI (2007). IRA Plan Modification No. 7, 50 Tufts Street, Somerville, MA, RTN 3-23246, dated October 11, 2007.

GEI (2007). IRA Plan Modification No. 8, 50 Tufts Street, Somerville, MA, RTN 3-23246, dated October 11, 2007.

GEI (2007). Monthly Remedial Monitoring Report No. 5, 50 Tufts Street, Somerville, MA, RTN 3-23246, dated October 19, 2007.

GEI (2007). Monthly Remedial Monitoring Report No. 6A, 50 Tufts Street, Somerville, MA, RTN 3-23246, dated October 31, 2007.

GEI (2007). Monthly Remedial Monitoring Report No. 6B, 50 Tufts Street, Somerville, MA, RTN 3-23246, dated November 8, 2007.

GEI (2007). Monthly Remedial Monitoring Report No. 7A, 50 Tufts Street, Somerville, MA, RTN 3-23246, dated November 8, 2007.

GEI (2007). Monthly Remedial Monitoring Report No. 7B, 50 Tufts Street, Somerville, MA, RTN 3-23246, dated November 8, 2007.

GEI (2007). IRA Status Report No. 4, 50 Tufts Street, Somerville, MA, RTN 3-23246, dated November 9, 2007.

GEI (2008). IRA Status Report No. 5 and Remedial Monitoring Report (RMR) No. 8, 50 Tufts Street, Somerville, MA, RTN 3-23246, dated May 12, 2008.

GEI (2008). Phase II Comprehensive Site Assessment (CSA), Method 3 Risk Characterization, and Phase III Remedial Action Plan (RAP), 50 Tufts Street, Somerville, MA, RTN 3-23246, dated July 14, 2008.

GEI (2008). IRA Status Report No. 6 and Remedial Monitoring Report (RMR) No. 9, 50 Tufts Street, Somerville, MA, RTN 3-23246, dated November 10, 2008.

GEI (2009). IRA Status Report No. 7 and Remedial Monitoring Report (RMR) No. 10, 50 Tufts Street, Somerville, MA, RTN 3-23246, dated May 11, 2009.

GEI (2009). Phase IV Remedy Implementation Plan (RIP), 50 Tufts Street, Somerville, MA, RTN 3-23246, dated May 11, 2009.

GEI (2009). IRA Completion Report and Remedial Monitoring Report (RMR) No. 11, 50 Tufts Street, Somerville, MA, RTN 3-23246, dated May 11, 2009.

GEI (2010). Phase IV Status Report No. 1 and Remedial Monitoring Report No. 12, 50 Tufts Street, Somerville, MA, RTN 3-23246, dated February 8, 2009.

GEI (2010). Phase IV Status Report No. 2 and Remedial Monitoring Report No. 13, 50 Tufts Street, Somerville, MA, RTN 3-23246, dated August 4, 2010.

GEI (2011). Phase IV Status Report No. 3 and Remedial Monitoring Report No. 14, 50 Tufts Street, Somerville, MA, RTN 3-23246, dated February 11, 2011.

GEI (2011). Immediate Response Action Completion Report Amendment, RTN 3-23246, 50 Tufts Street Site, Somerville, Massachusetts, dated April 1, 2011.

GEI Consultants

Geotechnical
Environmental
Water Resources
Ecological

MassDEP RTN 3-23246
Phase IV Final Inspection Report, Remedial Monitoring Report No. 15 and Phase V Remedy Operation Status Report
50 Tufts Street, Somerville, Massachusetts
UniFirst Corporation
August 4, 2011

Tables

Table 2-1
Exposure Pathway Elimination Measure (EPEM) Permits Obtained
50 Tufts Street
Somerville, Massachusetts

Property Address	EPEM Design Option	Date Completed or Last Modified	City of Somerville Department of Inspectional Services Permits Obtained			Activity and Use Limitation
			Building	Electrical	Plumbing	
91-93 Franklin Street	3	March, 2009	Yes	-	Yes	-
95 Franklin Street	2/1[(a)]	May, 2011	Yes	Yes	Yes	-
95R Franklin Street	2	December, 2007	Yes	Yes	-	Yes
150 Glen Street (Capuano Center)	1	February, 2007	Yes	Yes	-	-
166-168 Glen Street	3	November, 2010	Yes	-	Yes	Yes
9 Knowlton Street	1	January, 2010	-	Yes	-	Yes
13 Knowlton Street	1	January, 2010	-	Yes	-	-
17 Knowlton Street	3	March, 2009	Yes	-	Yes	Yes
31-33 Knowlton Street	1	February, 2008	-	Yes	-	-
32 Knowlton Street	3	May, 2009	Yes	Yes	Yes	Yes
35-37 Knowlton Street	3/1[(a)]	April, 2010	Yes	Yes	Yes	-
4 Morton Street	3	November, 2008	Yes	-	Yes	-
10 Morton Street	3	March, 2009	Yes	-	Yes	Yes
11 Morton Street	2	November, 2008	Yes	-	Yes	Yes
12 Morton Street	3	March, 2008	Yes	-	-	Yes
13 Morton Street	1	October, 2008	-	Yes	-	-
18 Morton Street	1	July, 2007	-	Yes	-	-
19-19A Morton Street	3	August, 2009	Yes	-	Yes	Yes
23 Tufts Street	1	May, 2007	-	Yes	-	-
27 Tufts Street	3/1[(a)]	May, 2011	Yes	Yes	Yes	-
50 Tufts Street	1	August, 2007	Yes	Yes	-	-
60 Tufts Street	1	April, 2009	-	Yes	-	-
103 Washington Street	1	July, 2007	-	Yes	-	-

General Notes:

1. 1. NS = Not sampled.
2. 2. NA = Not Applicable.

Footnotes:

(a) An Option 2 or 3 EPEM was initially installed at these properties; however, a fan was added to the EPEM to improve performance. Therefore, these EPEMs consist of Option 1 and Option 2 or 3 EPEM elements.

Table 3-1
Summary of Groundwater Sampling Activities
50 Tufts Street
Somerville, Massachusetts

Sampling Event and Date	Sampled Locations	QA/QC Samples
Quarterly Groundwater Sampling		
5/23/2006	SH-MW1, SH-MW2, SH-MW3, GEO-1, GEO-2, MW-1, MW-	NA
5/24/2006	GEO-3, GEO-4, GEO-5, GEO-6, MW101, MW102 MW103,	Field Duplicate of GEO-3
5/25/2006	SH-4	NA
Groundwater Sampling		
8/7/2006	MW103	NA
Quarterly Groundwater Sampling		
10/4/2006	SH-MW1, SH-MW2, SH-MW3, GEO-3 GEO-4, GEO-5 and	Field Duplicate MW900 (GEO-3)
10/5/2006	GEO-1, GEO-2, MW101, MW102, MW103, MW104 and	NA
Quarterly Groundwater Sampling		
1/16/2007	SH-MW1, SH-MW2, GEO-3, GEO-4, GEO-5, GEO-6,	Field Duplicate MW900 (GEO-6)
1/17/2007	SH-MW3, MW-1, MW-3, GEO-1 and GEO-2	Field Duplicate MW800 (GEO-1)
1/18/2007	MW103, MW106, MW107, MW108, MW109, MW110 and	NA
Groundwater Sampling		
2/20/2007	MW113 and MW114	NA
3/23/2007	MW112A, MW115R AND MW116	NA
Quarterly Groundwater Sampling		
4/12/07	SHMW1, SHMW3, GEO1, GEO2 and MW113	NA
4/13/07	GEO3, MW101, MW102, MW103, MW104, MW106,	Field Duplicate MW900 (MW101)
4/16/07	SHMW2, GEO4, GEO5, GEO6, MW105, MW108, MW109,	Field Duplicate MW901 (GEO6)
5/23/07	MWCS1	NA
Quarterly Groundwater Sampling		
7/18/2007	MW102, MW107, MW108, MW11, MW112A, MW113, MW114, MW115R, M2116 and MW117S	Sample from MW102 was used for MS/MSD Field Duplicate MW900 (MW113) Field Duplicate MW901 (MW116)
7/19/2007	SHMW2, MW104, MW105, MW106, MW117T, MW117D,	NA
7/20/2007	MW118S, MW118T and MW118D	NA
Groundwater Sampling		
8/22/07	MW119S, MW119T, MW120S and MW120D	NA
8/30/07	MW118S, MW118T and MW118D	NA
Quarterly Groundwater Sampling		
10/10/2007	MW102, MW105, MW106, MW107, MW108, MW111, MW112A, MW113, MW114, MW115	Sample from MW102 was used for MS/MSD Field Duplicate MW900 (MW113)
10/11/2007	MW117T, MW117D, MW118S, MW118T, MW118D	NA
10/12/2007	MW116, MW119S, MW119T, MW120S, MW120D,	Field Duplicate MW901 (MW116)
10/15/2007	MW104, MW117S	NA
10/22/2007	MW121S, MW121D	NA

General Notes:

1. NA = not applicable.
2. QA/QC = quality assurance/quality check.
3. MS/MSD = matrix spike/matrix spike duplicate.
4. VOC = volatile organic compound.
5. All groundwater samples submitted for VOC testing. Selected January 2007 samples, April 2010 samples, & April 2011 samples also submitted for natural attenuation parameter testing.

Table 3-1
Summary of Groundwater Sampling Activities
50 Tufts Street
Somerville, Massachusetts

Sampling Event and Date	**Sampled Locations**	**QA/QC Samples**
Quarterly Groundwater Sampling		
1/9/2008	MW105, MW115	NA
1/10/2008	MW102, MW106, MW107, MW108, MW111, MW112A	Sample from MW102 was used for MS/MSD
1/11/2008	MW104, MW113, MW114, MW116, MW117S, MW118S, MW201, MW202	Field Duplicate MW900 (MW113) Field Duplicate MW901 (MW116)
1/15/2008	MW117T, MW117D, MW118T, MW119S, MW120S,	NA
1/16/2008	MW118D, MW119T	NA
1/17/2008	MW120D	NA
Groundwater Sampling		
1/30/2008	MW122	NA
Quarterly Groundwater Sampling		
4/15/2008	GEO-1, SH-MW3, MW3, MW104, MW113, MW116, MW201, MW202, MW203	Field duplicate MW113 (MW900) Field duplicate MW116 (MW901)
4/16/2008	MW117S, MW117T, MW117D, MW118T, MW118D,	NA
4/17/2008	MW102, MW106, MW107, MW108, MW109, MW111, MW112A, MW114, MW115R, MW120D, MW121S,	Sample from MW102 was used for MS/MSD
4/18/2008	MW105	NA
Quarterly Groundwater Sampling		
7/14/2008	MW105, MW112A, MW121S, MW121D, MW122	Field duplicate MW112A (MW900) Field duplicate MW121D (MW901)
7/15/2008	GEO-1, GEO-2, MW-3, MW104,MW118S, MW118T, MW118D, MW119S, MW119T, MW120S, MW120D,	Sample from MW104 was used for MS/MSD
7/16/2008	MW116, MW117S, MW117T, MW117D, MW118D	NA
Quarterly Groundwater Sampling		
10/21/2008	MW104, GEO-1, GEO-2 MW116, MW117S, MW117T, MW117D, MW118S, MW118T, MW118D, MW202, MW-3	Sample from MW104 was used for MS/MSD
10/22/2008	MW105, MW112A, MW119S, MW119T, MW120S, MW120D, MW121S, MW121D, MW122	Field duplicate MW112A (MW901) Field duplicate MW121D (MW900)
Quarterly Groundwater Sampling		
4/15/2008	GEO-1, SH-MW3, MW3, MW104, MW113, MW116, MW201, MW202, MW203	Field duplicate MW113 (MW900) Field duplicate MW116 (MW901)
4/16/2008	MW117S, MW117T, MW117D, MW118T, MW118D,	NA
4/17/2008	MW102, MW106, MW107, MW108, MW109, MW111, MW112A, MW114, MW115R, MW120D, MW121S,	Sample from MW102 was used for MS/MSD
4/18/2008	MW105	NA
Quarterly Groundwater Sampling		
7/14/2008	MW105, MW112A, MW121S, MW121D, MW122	Field duplicate MW112A (MW900) Field duplicate MW121D (MW901)
7/15/2008	GEO-1, GEO-2, MW-3, MW104,MW118S, MW118T, MW118D, MW119S, MW119T, MW120S, MW120D,	Sample from MW104 was used for MS/MSD
7/16/2008	MW116, MW117S, MW117T, MW117D, MW118D	NA

General Notes:

1. NA = not applicable.
2. QA/QC = quality assurance/quality check.
3. MS/MSD = matrix spike/matrix spike duplicate.
4. VOC = volatile organic compound.
5. All groundwater samples submitted for VOC testing. Selected January 2007 samples, April 2010 samples, & April 2011 samples also submitted for natural attenuation parameter testing.

Table 3-1
Summary of Groundwater Sampling Activities
50 Tufts Street
Somerville, Massachusetts

Sampling Event and Date	Sampled Locations	QA/QC Samples
Quarterly Groundwater Sampling		
10/21/2008	MW104, GEO-1, GEO-2 MW116, MW117S, MW117T, MW117D, MW118S, MW118T, MW118D, MW202, MW-3	Sample from MW104 was used for MS/MSD
10/22/2008	MW105, MW112A, MW119S, MW119T, MW120S, MW120D, MW121S, MW121D, MW122	Field duplicate MW112A (MW901) Field duplicate MW121D (MW900)
Quarterly Groundwater Sampling		
1/12/2009	MW105, MW112A, MW121S, MW121D, MW122	Field duplicate MW112A (MW900) Field duplicate MW121D (MW901)
1/13/2009	GEO-1, GEO-2, MW117S, MW117T, MW117D, MW119S,	NA
1/14/2009	MW104, MW-3, MW116, MW118S, MW118T, MW118D	Sample from MW104 was used for MS/MSD
Quarterly Groundwater Sampling		
4/13/2009	GEO-1, GEO-2, MW105, MW112A, MW119S, MW119T, MW121S, MW121D, MW122	Field duplicate MW121D (MW900) Field duplicate MW112A (MW901)
4/14/2009	MW-3, MW104, MW117S, MW117T, MW117D, MW118T,	NA
4/15/2009	MW102, MW116, MW118S	NA
Quarterly Groundwater Sampling		
7/14/2009	MW105, MW112A, MW116, MW118T, MW121S, MW121D, MW202	Field duplicate MW121D (MW900) Field duplicate MW112A (MW901)
7/15/2009	GEO-1, GEO-2, MW-3, MW104,MW117S, MW117T, MS117D, MW118S, MW118D, MW119S, MW119T,	Sample from MW104 was used for MS/MSD
Quarterly Groundwater Sampling		
10/14/2009	GEO-1, GEO-2, MW104, MW105, MW112A, MW116, MW117S, MW117D, MW118S, MW118D, MW121S,	Field duplicate MW112A (MW900) Field duplicate MW118D (MW901)
10/15/2009	MW119T, MW119S, MW120S, MW120D, MW118T	Sample from MW104 was used for MS/MSD
10/16/2009	MW117T, MW3	
Annual Groundwater Sampling		
4/12/2010	MW104, MW105, MW112A, MW118S, MW118T, MW118D, MW121S, MW121D, MW122, MW202	Field duplicate MW112A (MW900) Sample from MW104 was used for MS/MSD
4/13/2010	GEO-1, GEO-2, SH-MW3, MW116, MW117S, MW117T, MW117D, MW119S, MW119T, MW120S, MW120D	Field duplicate MW116 (MW901)
Semi-Annual Groundwater Sampling		
10/27/2010	MW112A, MW122	NA
Annual Groundwater Sampling		
4/20/2011	MW105, MW112A, MW117D, MW118S, MW118T,	Field duplicate MW112A (MW900)
4/21/2011	GEO-2, SH-MW3, MW104, MW116, MW117S, MW117T	Field duplicate MW116 (MW901) Sample from MW104 was used for MS/MSD
4/22/2011	GEO-1, MW119S, MW119D, MW120S, MW120D, MW202	

General Notes:

1. NA = not applicable.
2. QA/QC = quality assurance/quality check.
3. MS/MSD = matrix spike/matrix spike duplicate.
4. VOC = volatile organic compound.
5. All groundwater samples submitted for VOC testing. Selected January 2007 samples, April 2010 samples, & April 2011 samples also submitted for natural attenuation parameter testing.

Table 3-2

Chemical Testing Results - Groundwater

50 Tufts Street

Somerville, Massachusetts

Sample Location:			GEO-1									
Sample Name:			GEO-1	GEO-1	GEO-1	GEO-1	MW800 (FD)	GEO1	GEO-1	GEO-1	GEO-1	GEO-1
Well Screen Interval (ft bgs):			5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20
Sample Date:			8/16/04	5/23/06	10/5/06	1/17/07	1/17/07	4/12/07	4/15/08	7/15/08	10/21/08	1/13/09
Collected By:			GeoInsight	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte	Method	Units										
Volatile Organic Compounds (VOCs)												
Acetone	8260	µg/l	< 400	< 5.0	< 5.0	< 5.0	< 5.0	9.7	< 5.0	< 5.0	< 5.0	< 5.0 J+
Benzene			< 20	< 0.50	< 0.50	< 0.50	< 0.50	0.27 J	< 0.50	< 0.50	< 0.50	< 0.50
Bromobenzene			< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromodichloromethane			< 20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform			< 20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)			< 200	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Butylbenzene			< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon disulfide			< 100	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon tetrachloride			< 20	3.6	1.4	2.3	2.3	5.4	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene			< 20	0.76 J	0.86 J	0.76 J	0.84 J	0.77 J	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane			< 40	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chloroform			< 20	< 1.0	< 1.0	0.60 J	0.61 J	1.5	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane			< 40	< 2.0	3.7	< 2.0	1.8 J	6.2	< 2.0	< 2.0	< 2.0	< 2.0
1,3-Dichlorobenzene			< 20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane			< 40	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0
1,1-Dichloroethane			< 20	4.3	2.9	5.4	5.6	10.6	< 1.0	0.38 J	< 1.0	< 1.0
1,2-Dichloroethane			< 20	< 1.0	< 1.0	< 1.0	< 1.0	1.3	< 1.0	13.4	< 1.0	< 1.0
1,1-Dichloroethylene			39.8	989	1330 E	247	241	8980	3.0	26.2	1.4	1.3
cis-1,2-Dichloroethylene			< 20	4.3	2.3	3.3	< 1.0	8.7	< 1.0	1.2	< 1.0	< 1.0
trans-1,2-Dichloroethylene			< 20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane			< 20	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,4-Dioxane			NT	< 25	< 25 R	< 25	< 25	< 25	< 25	< 25	< 25	< 25 J+
Ethylbenzene			< 20	< 1.0	< 1.0	< 1.0	< 1.0	0.41 J	< 1.0	< 1.0	< 1.0	< 1.0
2-Hexanone			< 200	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropyl benzene			< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-Isopropyltoluene			< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl tert-butyl ether			< 20	64.2	5.3 J+	2.5	2.7	6.9 J+	7.9	< 1.0	< 1.0	0.26 J
Methylene chloride			< 200	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Naphthalene			< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Propylbenzene			< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tert-amyl methyl ether			NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane			< 20	5.7	3.0 J	5.7	5.8	15.6	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethylene (PCE)			1880	18600	19500	17300	18000	48500	135	268	115	76.1
Tetrahydrofuran			NT	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Toluene			< 20	1.2	0.72 J	1.1	0.99 J	2.1	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)			1720	19100	9620 J+	13300	14200	42500 J+	29.5	217	8.5	9.2
1,1,2-Trichloroethane			< 20	< 1.0	< 1.0	0.94 J	0.99 J	3.8	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene (TCE)			898	10000	5530	9090	9660	30600	18.9	70.6	11.0	8.9
1,2,4-Trimethylbenzene			< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene			< 20	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl chloride			< 20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene			< 40	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene			< 20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Xylene			ND	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Metals	6010B	µg/l	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic												
Iron												
Manganese												
Others			NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Methane	8015	µg/l										
Ethane	8015	µg/l										
Ethylene	8015	µg/l										
Alkalinity	E310.1	µg/l										
Chloride	E325.3	µg/l										
Chlorine, Total Residual	E330.4	µg/l										
Nitrate & Nitrite as N	E353.2	µg/l										
Nitrogen, Nitrate	E353.2	µg/l										
Nitrogen, Nitrite	E354.1	µg/l										
Sulfate	E375.4	µg/l										
Sulfide	E376.1	µg/l										
Surfactants	E425.1	µg/l										
Total Organic Carbon	E415.1	µg/l										

Sample Location:	GEO-1					GEO-2				
Sample Name:	GEO-1	GEO-1	GEO-1	GEO-1	GEO-1	GEO-2	GEO-2	GEO-2	GEO-2	GEO2
Well Screen Interval (ft bgs):	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20
Sample Date:	4/13/09	7/15/09	10/14/09	4/13/10	4/22/11	8/16/04	5/23/06	10/5/06	1/17/07	4/12/07
Collected By:	GEI	GEI	GEI	GEI	GEI	GeoInsight	GEI	GEI	GEI	GEI
Analyte										
Volatile Organic Compounds (VOCs)										
Acetone	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	487	< 5.0	< 5.0	< 25	< 5.0
Benzene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50	< 2.5	< 0.50
Bromobenzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 5.0
Bromodichloromethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 5.0	< 1.0
Bromoform	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 5.0	< 1.0
2-Butanone (MEK)	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 5.0
n-Butylbenzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 5.0
Carbon disulfide	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 5.0	< 5.0	4.5 J	< 5.0
Carbon tetrachloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 5.0	< 1.0
Chlorobenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 5.0	< 1.0
Chloroethane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 10	< 2.0	< 2.0	< 10	< 2.0
Chloroform	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 5.0	< 1.0
Chloromethane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 10	< 2.0	< 2.0	< 10	< 2.0
1,3-Dichlorobenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 5.0	< 1.0
Dichlorodifluoromethane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 10	< 2.0	< 2.0	< 10	< 2.0
1,1-Dichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	2.2	2.0	< 5.0	2.5
1,2-Dichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 5.0	< 1.0
1,1-Dichloroethylene	1.7	< 1.0	2.0	< 1.0	7.9	23.2	14.2	26.3	25.2	11.5
cis-1,2-Dichloroethylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	1.6	9.0	< 1.0
trans-1,2-Dichloroethylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 5.0	< 1.0
1,2-Dichloropropane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 2.0	< 2.0	< 10	< 2.0
1,4-Dioxane	< 25	< 25	< 25	< 25	367	NT	< 25	< 25 R	< 130	< 25
Ethylbenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	3.1 J	< 1.0
2-Hexanone	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 5.0
Isopropyl benzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 5.0
4-Isopropyltoluene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 5.0
Methyl tert-butyl ether	1.1	< 1.0	4.8	< 1.0	< 1.0	37.6	79.9	12.8 J+	9.8	16.5
Methylene chloride	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 2.0	< 2.0	< 10	< 2.0
Naphthalene	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	8.3 J	< 5.0
n-Propylbenzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 5.0
Tert-amyl methyl ether	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 10	< 2.0
1,1,1,2-Tetrachloroethane	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 5.0
Tetrachloroethylene (PCE)	64.3	71.5	698	79.2	2580	285	131	693	1420	120
Tetrahydrofuran	< 10	< 10	< 10	< 10	< 10	NT	< 10	< 10	< 5.0	< 10
Toluene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	3.4 J	< 1.0
1,1,1-Trichloroethane (TCA)	10.0	5.9	16.6 J+	7.0	12.2	490	125	376	867	147 J+
1,1,2-Trichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 5.0	< 1.0
Trichloroethylene (TCE)	8.0	10.1	31.2	8.2	35.6	60	27.3	170	602	36.0
1,2,4-Trimethylbenzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	4.7 J	< 5.0
1,3,5-Trimethylbenzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 5.0
Vinyl chloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0	11.2	< 1.0
o-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 5.0	< 1.0
Total Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	< 1.0	< 1.0	14.2	< 1.0
Metals	NT	NT	NT	NT	NT	NT	NT	NT		NT
Arsenic									< 10	
Iron									< 100	
Manganese										
Others	NT	NT	NT	NT	NT	NT	NT	NT		NT
Methane									< 10	
Ethane									< 10	
Ethylene									< 10	
Alkalinity									104000	
Chloride									1310000	
Chlorine, Total Residual									NT	
Nitrate & Nitrite as N									7000	
Nitrogen, Nitrate									7000	
Nitrogen, Nitrite									< 10	
Sulfate									88000	
Sulfide									< 2000	
Surfactants									< 100	
Total Organic Carbon									< 1000	

Sample Location:	GEO-2								GEO-3		
Sample Name:	GEO-2	GEO-2	GEO-2	GEO-2	GEO-2	GEO-2	GEO-2	GEO-2	GEO-3	GEO-3	MW900 (FD)
Well Screen Interval (ft bgs):	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20
Sample Date:	7/15/08	10/22/08	1/13/09	4/13/09	7/15/09	10/14/09	4/13/10	4/21/11	8/16/04	5/24/06	5/24/06
Collected By:	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GeoInsight	GEI	GEI
Analyte											
Volatile Organic Compounds (VOCs)											
Acetone	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 1000	< 5.0	< 5.0
Benzene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
Bromobenzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromodichloromethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
Bromoform	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
2-Butanone (MEK)	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Butylbenzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon disulfide	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 250	< 5.0	< 5.0
Carbon tetrachloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
Chlorobenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
Chloroethane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 100	< 2.0	< 2.0
Chloroform	< 1.0	< 1.0	0.62 J	< 1.0	0.60 J	0.84 J	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
Chloromethane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 100	< 2.0	< 2.0
1,3-Dichlorobenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
Dichlorodifluoromethane	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 100	< 2.0	< 2.0
1,1-Dichloroethane	1.1	< 1.0	< 1.0	0.29 J	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
1,2-Dichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
1,1-Dichloroethylene	13.4	8.4	7.0	17.0	6.5	10.8	13.8	3.7	108	< 1.0	< 1.0
cis-1,2-Dichloroethylene	< 1.0	< 1.0	< 1.0	2.8	< 1.0	< 1.0	3.1	2.1	< 5.0	< 1.0	< 1.0
trans-1,2-Dichloroethylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
1,2-Dichloropropane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 2.0	< 2.0
1,4-Dioxane	< 25	< 25	< 25 J+	< 25	< 25	< 25	< 25	< 25	NT	< 25	< 25
Ethylbenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
2-Hexanone	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropyl benzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-Isopropyltoluene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl tert-butyl ether	< 1.0	5.9	0.45 J	< 1.0	0.29 J	0.56 J	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
Methylene chloride	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 2.0	< 2.0
Naphthalene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Propylbenzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tert-amyl methyl ether	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethylene (PCE)	115	140	110	263 G	202	167	480	66.4	4020	162	157
Tetrahydrofuran	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	NT	< 10	< 10
Toluene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)	70.5	25.5	22.5	110	29.7	37.5 J+	61.9	4.3	204	4.0	4.4
1,1,2-Trichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
Trichloroethylene (TCE)	22.8	20.9	19.7	99.7	31.7	33.4	103	14.7	507	14.4	14.1
1,2,4-Trimethylbenzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl chloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
m,p-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 100	< 1.0	< 1.0
o-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
Total Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	< 1.0	< 1.0
Metals	NT	NT	NT	NT	NT	NT			NT	NT	NT
Arsenic							NT	NT			
Iron							< 100 J+	< 100			
Manganese							< 15	< 15			
Others	NT	NT	NT	NT	NT	NT			NT	NT	NT
Methane							1.58	< 0.30			
Ethane							< 0.10	< 0.10			
Ethylene							< 0.10	< 0.10			
Alkalinity							44100	50400			
Chloride							165000	53700			
Chlorine, Total Residual							< 50 A	< 50			
Nitrate & Nitrite as N							6700	4400			
Nitrogen, Nitrate							6700	4400			
Nitrogen, Nitrite							< 10	< 10			
Sulfate							117000	105000			
Sulfide							< 2000	< 2000			
Surfactants							< 100	< 100			
Total Organic Carbon							2400	4600			

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes refer to the laboratory data reports.
2. ft bgs = feet below ground surface.
3. µg/l = micrograms per liter.
4. "<" = The analyte was not detected at a concentration above the specified reporting limit.
5. SHA = Sanborn Head & Associates.
6. Results in bold exceed the current applicable Method 1 GW2 standard.
7. FD = Field Duplicate Sample.
8. NT = Not Tested.

Qualifying Notes:

A The result is estimated due to exceedence of holding time criteria.
B The analyte found in associated method blank.
C+ The result has a high bias due to surrogate recovery above upper control limits.
E The value exceeds the calibration range.
F+ The result has a high bias due to matrix spike recovery above upper control limits.
F- The result has a low bias due to matrix spike recovery below lower control limits.
G The result is estimated due to duplicate precision outside control limits.
J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.
R The result is rejected due to gross exceedence of minimum response factor criteria.

Table 3-2
Chemical Testing Results - Groundwater
50 Tufts Street
Somerville, Massachusetts

Sample Location:			GEO-3 (continued)				GEO-4				
Sample Name:			GEO-3	MW900 (FD)	GEO-3	GEO3	GEO-4	GEO-4	GEO-4	GEO-4	GEO4
Well Screen Interval (ft bgs):			5 to 20	5 to 20	5 to 20	5 to 20	4 to 19	4 to 19	4 to 19	4 to 19	4 to 19
Sample Date:			10/4/06	10/4/06	1/16/07	4/13/07	8/16/04	5/24/06	10/4/06	1/16/07	4/16/07
Collected By:			GEI	GEI	GEI	GEI	GeoInsight	GEI	GEI	GEI	GEI
Analyte	**Method**	**Units**									
Volatile Organic Compounds (VOCs)											
Acetone	8260	μg/l	< 5.0	< 5.0	< 5.0	< 5.0	< 2000	< 5.0	< 5.0	< 100	< 50
Benzene			< 0.50	< 0.50	< 0.50	< 0.50	< 100	< 0.50	< 0.50	< 10	< 5.0
Bromobenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 100	< 5.0	< 5.0	< 100	< 50
Bromodichloromethane			< 1.0	< 1.0	< 1.0	< 1.0	< 100	< 1.0	< 1.0	< 20	< 10
Bromoform			< 1.0	< 1.0	< 1.0	< 1.0	< 100	< 1.0	< 1.0	< 20	< 10
2-Butanone (MEK)			< 5.0	< 5.0	< 5.0	< 5.0	< 1000	< 5.0	< 5.0	< 100	< 50
n-Butylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 100	< 5.0	< 5.0	< 100	< 50
Carbon disulfide			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 100	< 50
Carbon tetrachloride			< 1.0	< 1.0	< 1.0	< 1.0	< 100	< 1.0	< 1.0	< 20	< 10
Chlorobenzene			< 1.0	< 1.0	< 1.0	< 1.0	< 100	< 1.0	< 1.0	< 20	< 10
Chloroethane			< 2.0	< 2.0	< 2.0	< 2.0	< 200	< 2.0	< 2.0	< 40	< 20
Chloroform			< 1.0	< 1.0	< 1.0	< 1.0	< 100	< 1.0	2.5	< 20	< 10
Chloromethane			< 2.0	< 2.0	< 2.0	< 2.0	< 200	< 2.0	< 2.0	< 40	< 20
1,3-Dichlorobenzene			< 1.0	< 1.0	< 1.0	< 1.0	< 100	< 1.0	< 1.0	< 20	< 10
Dichlorodifluoromethane			< 2.0	< 2.0	< 2.0	< 2.0	< 200	< 2.0	< 2.0	< 40	< 20
1,1-Dichloroethane			11.6	11.6	2.6	< 1.0	< 100	2.7	7.1	< 20	< 10
1,2-Dichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 100	< 1.0	< 1.0	< 20	< 10
1,1-Dichloroethylene			59.3	59.1	11.5	1.4	< 100	6.1	17.8	< 20	< 10
cis-1,2-Dichloroethylene			2.8	2.6	1.2	< 1.0	< 100	6.3	16.7	< 20	5.5 J
trans-1,2-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 100	< 1.0	< 1.0	< 20	< 10
1,2-Dichloropropane			< 2.0	< 2.0	< 2.0	< 2.0	< 100	< 2.0	< 2.0	< 40	< 20
1,4-Dioxane			< 25 R	< 25 R	< 25	< 25	NT	< 25	< 25 R	< 5.0	< 250
Ethylbenzene			< 1.0	< 1.0	< 1.0	< 1.0	< 100	< 1.0	< 1.0	< 20	< 10
2-Hexanone			< 5.0	< 5.0	< 5.0	< 5.0	< 1000	< 5.0	< 5.0	< 100	< 50
Isopropyl benzene			< 5.0	< 5.0	< 5.0	< 5.0	< 100	< 5.0	< 5.0	< 100	< 50
4-Isopropyltoluene			< 5.0	< 5.0	< 5.0	< 5.0	< 100	< 5.0	< 5.0	< 100	< 50
Methyl tert-butyl ether			1.2 J+	1.1 J+	< 1.0	< 1.0	< 100	< 1.0	1.5 J+	< 20	< 10
Methylene chloride			< 5.0	< 2.0	< 5.0	< 2.0	< 1000	< 2.0	< 2.0	< 40	< 20
Naphthalene			< 5.0	< 5.0	< 5.0	< 5.0	< 100	< 5.0	< 5.0	< 100	< 50
n-Propylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 100	< 5.0	< 5.0	< 100	< 50
Tert-amyl methyl ether			< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 40	< 20
1,1,1,2-Tetrachloroethane			< 5.0	< 5.0	< 5.0	< 5.0	< 100	< 5.0	0.84 J	< 100	< 50
Tetrachloroethylene (PCE)			2720	2340	529	93.2	12900	6690	24100	16700	8240
Tetrahydrofuran			< 10	< 10	< 10	< 10	NT	< 10	< 10	< 200	< 100
Toluene			< 1.0	< 1.0	< 1.0	< 1.0	< 100	< 1.0	< 1.0	< 20	< 10
1,1,1-Trichloroethane (TCA)			78.2 J+	77.2 J+	16.2	< 1.0	1170	113	321 J+	113	70.9
1,1,2-Trichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 100	< 1.0	< 1.0	< 20	< 10
Trichloroethylene (TCE)			209	207	70.2	10.0	720	86.8	235	129	74.8
1,2,4-Trimethylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 100	< 5.0	< 5.0	< 100	< 50
1,3,5-Trimethylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 100	< 5.0	< 5.0	< 100	< 50
Vinyl chloride			< 1.0	< 1.0	< 1.0	< 1.0	< 100	< 1.0	< 1.0	< 20	< 10
m,p-Xylene			< 1.0	< 1.0	< 1.0	< 1.0	< 200	< 1.0	< 1.0	< 20	< 10
o-Xylene			< 1.0	< 1.0	< 1.0	< 1.0	< 100	< 1.0	< 1.0	< 20	< 10
Total Xylene			< 1.0	< 1.0	< 1.0	< 1.0	ND	< 1.0	< 1.0	< 20	< 10
Metals	6010B	μg/l	NT	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic											
Iron											
Manganese											
Others			NT	NT	NT	NT	NT	NT	NT	NT	NT
Methane	8015	μg/l									
Ethane	8015	μg/l									
Ethylene	8015	μg/l									
Alkalinity	E310.1	μg/l									
Chloride	E325.3	μg/l									
Chlorine, Total Residual	E330.4	μg/l									
Nitrate & Nitrite as N	E353.2	μg/l									
Nitrogen, Nitrate	E353.2	μg/l									
Nitrogen, Nitrite	E354.1	μg/l									
Sulfate	E375.4	μg/l									
Sulfide	E376.1	μg/l									
Surfactants	E425.1	μg/l									
Total Organic Carbon	E415.1	μg/l									

Sample Location:	GEO-5					GEO-6						
Sample Name:	GEO-5	GEO-5	GEO-5	GEO-5	GEO5	GEO-6	GEO-6	GEO-6	GEO-6	MW900 (FD)	GEO6	MW901 (FD)
Well Screen Interval (ft bgs):	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20
Sample Date:	8/16/04	5/24/06	10/4/06	1/16/07	4/16/07	8/16/04	5/24/06	10/4/06	1/16/07	1/16/07	4/16/07	4/16/07
Collected By:	GeoInsight	GEI	GEI	GEI	GEI	GeoInsight	GEI	GEI	GEI	GEI	GEI	GEI
Analyte												
Volatile Organic Compounds (VOCs)												
Acetone	< 2000	< 5.0	< 5.0	< 250	< 5.0	< 200	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0
Benzene	< 100	< 0.50	< 0.50	< 25	< 0.50	< 10	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 0.50
Bromobenzene	< 100	< 5.0	< 5.0	< 250	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0
Bromodichloromethane	< 100	< 1.0	< 1.0	< 50	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
Bromoform	< 100	< 1.0	< 1.0	< 50	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
2-Butanone (MEK)	< 1000	< 5.0	< 5.0	< 250	< 5.0	< 100	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0
n-Butylbenzene	< 100	< 5.0	< 5.0	< 250	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0
Carbon disulfide	< 5.0	< 5.0	< 5.0	< 250	< 5.0	< 5.0	< 5.0	< 5.0	0.81 J	< 5.0	< 10	< 5.0
Carbon tetrachloride	< 100	< 1.0	< 1.0	< 50	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
Chlorobenzene	< 100	< 1.0	< 1.0	< 50	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
Chloroethane	< 200	< 2.0	< 2.0	< 100	< 2.0	< 20	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0
Chloroform	< 100	< 1.0	0.62 J	< 50	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
Chloromethane	< 200	< 2.0	< 2.0	< 100	< 2.0	< 20	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0
1,3-Dichlorobenzene	< 100	< 1.0	< 1.0	< 50	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
Dichlorodifluoromethane	< 200	< 2.0	< 2.0	< 100	< 2.0	< 20	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0
1,1-Dichloroethane	< 100	3.0	9.7	< 50	< 1.0	< 10	2.0	4.4	1.7	1.6	0.92 J	1.1
1,2-Dichloroethane	< 100	< 1.0	< 1.0	< 50	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
1,1-Dichloroethylene	< 100	8.9	32.7	< 50	< 1.0	< 10	4.6	11.0	4.4	3.2	2.8	3.8
cis-1,2-Dichloroethylene	< 100	12.5	35.2	< 50	< 1.0	14.8	9.1	15.4	7.7	6.9	5.3	6.3
trans-1,2-Dichloroethylene	< 100	< 1.0	< 1.0	< 50	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
1,2-Dichloropropane	< 100	< 2.0	< 2.0	< 100	< 2.0	< 10	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0
1,4-Dioxane	NT	< 25	< 25 R	< 1300	< 25	NT	< 25	< 25 R	< 25	< 25	< 5.0	< 25
Ethylbenzene	< 100	< 1.0	< 1.0	< 50	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
2-Hexanone	< 1000	< 5.0	< 5.0	< 250	< 5.0	< 100	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0
Isopropyl benzene	< 100	< 5.0	< 5.0	< 250	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0
4-Isopropyltoluene	< 100	< 5.0	< 5.0	< 250	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0
Methyl tert-butyl ether	< 100	1.3	3.3 J+	< 50	< 1.0	< 10	1.3	1.9 J+	1.2	1.2	0.80 J	0.81 J
Methylene chloride	< 1000	< 2.0	< 2.0	< 100	< 2.0	< 100	< 2.0	< 2.0	< 2.0	1.3 J	2.5 J	< 2.0
Naphthalene	< 100	< 5.0	< 5.0	< 250	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0
n-Propylbenzene	< 100	< 5.0	< 5.0	< 250	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0
Tert-amyl methyl ether	NT	< 2.0	< 2.0	< 100	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0
1,1,1,2-Tetrachloroethane	< 100	< 5.0	< 5.0	< 250	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0
Tetrachloroethylene (PCE)	14400	2440	12900	254 F+	17.9	782	675	1980	632	594 F+	618	497
Tetrahydrofuran	NT	< 10	< 10	< 500	< 10	NT	< 10	< 10	< 10	< 10	< 20	< 10
Toluene	< 100	< 1.0	< 1.0	< 50	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
1,1,1-Trichloroethane (TCA)	646	246	652	< 50	< 1.0	27.8	42.5	77.2 J+	33.7	25.3	21.2	26.8
1,1,2-Trichloroethane	< 100	< 1.0	< 1.0	< 50	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
Trichloroethylene (TCE)	404	146	446	< 50	< 1.0	122	78.8	131	75.3	56.5	55.5	70.5
1,2,4-Trimethylbenzene	< 100	< 5.0	< 5.0	< 250	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0
1,3,5-Trimethylbenzene	< 100	< 5.0	< 5.0	< 250	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0
Vinyl chloride	< 100	< 1.0	< 1.0	< 50	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
m,p-Xylene	< 200	< 1.0	< 1.0	< 50	< 1.0	< 20	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
o-Xylene	< 100	< 1.0	< 1.0	< 50	< 1.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
Total Xylene	ND	< 1.0	< 1.0	< 50	< 1.0	ND	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
Metals	NT	NT	NT	NT	NT	NT	NT	NT			NT	NT
Arsenic									< 10	< 10		
Iron									< 100	< 100		
Manganese												
Others	NT	NT	NT	NT	NT	NT	NT	NT			NT	NT
Methane									< 10	< 10		
Ethane									< 10	< 10		
Ethylene									< 10	< 10		
Alkalinity									134000	133000		
Chloride									825000	825000		
Chlorine, Total Residual									NT	NT		
Nitrate & Nitrite as N									3500	3500		
Nitrogen, Nitrate									3500	3500		
Nitrogen, Nitrite									< 10	< 10		
Sulfate									45800	45500		
Sulfide									< 2000	< 2000		
Surfactants									< 100	< 100		
Total Organic Carbon									< 1000	< 1000		

Sample Location:	MW-1					MW101				
Sample Name:	MW-1	MW-1	MW-1	MW-1	MW1	MW-101	MW101	MW101	MW101	MW900
Well Screen Interval (ft bgs):	Unknown	Unknown	Unknown	Unknown	Unknown	9 to 19	9 to 19	9 to 19	9 to 19	9 to 19
Sample Date:	7/1/02	8/9/04	5/23/06	1/17/07	4/17/07	5/24/06	10/5/06	1/17/07	4/13/07	4/13/07
Collected By:	SHA	GeoInsight	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte										
Volatile Organic Compounds (VOCs)										
Acetone	< 5.000	< 40000	40.0	36.1	< 2500	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	< 5.00	< 2000	2.0	< 0.50	< 250	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromobenzene	< 25000	< 2000	< 5.0	< 5.0	< 2500	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromodichloromethane	< 5.00	< 2000	< 1.0	< 1.0	< 500	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	< 5.00	< 2000	< 1.0	< 1.0	< 500	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	< 5.000	< 4000	< 5.0	< 5.0	< 2500	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Butylbenzene	< 5.00	< 2000	< 5.0	< 5.0	< 2500	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon disulfide	< 5.000	< 10000	< 5.0	< 5.0	< 2500	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon tetrachloride	< 5.00	< 2000	19.0	22.4	< 500	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	< 5.00	< 2000	1.1	1.2	< 500	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	< 10000	< 4000	< 2.0	< 2.0	< 1000	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chloroform	< 7500	< 2000	3.7	1.6	< 500	1.8	< 1.0	< 1.0	< 1.0	1.8
Chloromethane	< 25000	< 4000	< 2.0	14.6	< 1000	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,3-Dichlorobenzene	< 25000	< 2000	< 1.0	< 1.0	< 500	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane	< 5.000	< 4000	< 2.0	< 2.0	< 1000	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1-Dichloroethane	< 7500	< 2000	59.8	59.9	< 500	< 1.0	< 1.0	< 1.0	< 1.0	1.6
1,2-Dichloroethane	< 5.00	< 2000	4.0	< 1.0	< 500	< 1.0	< 1.0	< 1.0	3.9 G	< 1.0
1,1-Dichloroethylene	< 5.00	< 2000	11500	1260	2290	8.7	21.1	14.1	< 1.0	4.6 G
cis-1,2-Dichloroethylene	< 5.00	< 2000	24.3	7.7	< 500	< 1.0	< 1.0	1.3	< 1.0	2.1 G
trans-1,2-Dichloroethylene	< 7500	< 2000	< 1.0	< 1.0	< 500	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	< 18000	< 2000	4.5	< 2.0	< 1000	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,4-Dioxane	NT	NT	< 25 R	< 25	< 13000	< 25	< 25 R	< 25	< 25	< 25
Ethylbenzene	< 5.00	< 2000	2.8	4.4	< 500	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Hexanone	< 5.000	< 20000	< 5.0	< 5.0	< 2500	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropyl benzene	< 5.00	< 2000	< 5.0	0.84 J	< 2500	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-Isopropyltoluene	< 5.00	< 2000	< 5.0	< 5.0	< 2500	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl tert-butyl ether	< 10000	< 2000	< 1.0 J+	< 1.0	< 500	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0
Methylene chloride	< 5.000	< 20000	< 2.0	< 2.0	< 1000	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Naphthalene	< 5.000	< 2000	< 5.0	2.4 J	< 2500	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Propylbenzene	< 5.00	< 2000	0.42 J	1.8 J	< 2500	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tert-amyl methyl ether	NT	NT	< 2.0	< 2.0	< 1000	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane	< 5.00	< 2000	38.1	22.8	< 2500	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethylene (PCE)	52000	24200	34400	74900	49600	163	171	192	94.0	90.7
Tetrahydrofuran	NT	NT	< 10	< 10	< 5000	< 10	< 10	< 10	< 10	< 10
Toluene	< 7500	< 2000	19.6	15.3	< 500	< 1.0	< 1.0	0.38 J	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)	290000	112000	255000	135000	151000	110	146	131	50.5 J+	43.0 J+
1,1,2-Trichloroethane	< 7500	< 2000	85.8	16.2	< 500	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene (TCE)	220000	128000	175000	120000	103000	50.5	30.2	38.4	47.2	45.7
1,2,4-Trimethylbenzene	< 25000	< 2000	1.3 J	4.2 J	< 2500	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene	< 25000	< 2000	1.3 J	4.8 J	< 2500	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl chloride	< 10000	< 2000	< 1.0	1.2	< 500	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	< 5.00	< 4000	4.8	5.9	< 500	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	< 5.00	< 2000	9.2	13.8	< 500	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Xylene	ND	ND	14.0	19.7	< 500	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Metals	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic										
Iron										
Manganese										
Others	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Methane										
Ethane										
Ethylene										
Alkalinity										
Chloride										
Chlorine, Total Residual										
Nitrate & Nitrite as N										
Nitrogen, Nitrate										
Nitrogen, Nitrite										
Sulfate										
Sulfide										
Surfactants										
Total Organic Carbon										

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes refer to the laboratory data reports.
2. ft bgs = feet below ground surface.
3. μg/l = micrograms per liter.
4. "<" = The analyte was not detected at a concentration above the specified reporting limit.
5. SHA = Sanborn Head & Associates.
6. Results in bold exceed the current applicable Method 1 GW2 standard.
7. FD = Field Duplicate Sample.
8. NT = Not Tested.

Qualifying Notes:

A The result is estimated due to exceedence of holding time criteria.
B The analyte found in associated method blank.
C+ The result has a high bias due to surrogate recovery above upper control limits.
E The value exceeds the calibration range.
F+ The result has a high bias due to matrix spike recovery above upper control limits.
F- The result has a low bias due to matrix spike recovery below lower control limits.
G The result is estimated due to duplicate precision outside control limits.
J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.
R The result is rejected due to gross exceedence of minimum response factor criteria.

Table 3-2

Chemical Testing Results - Groundwater

50 Tufts Street
Somerville, Massachusetts

Sample Location:			MW102							
Sample Name:			MW-102	MW102	MW-102	MW102	MW102	MW102	MW102	MW102
Well Screen Interval (ft bgs):			6 to 16	6 to 16	6 to 16	6 to 16	6 to 16	6 to 16	6 to 16	6 to 16
Sample Date:			5/24/06	10/5/06	1/16/07	4/13/07	7/18/07	10/10/07	1/10/08	4/17/08
Collected By:			GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte	Method	Units								
Volatile Organic Compounds (VOCs)										
Acetone	8260	µg/l	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 10	< 5.0	< 5.0
Benzene			< 0.50	< 0.50	< 0.50	< 0.50	NT	< 1.0	< 0.50	< 0.50
Bromobenzene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 10	< 5.0	< 5.0
Bromodichloromethane			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 2.0	< 1.0	< 1.0
Bromoform			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 2.0	< 1.0	< 1.0
2-Butanone (MEK)			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 10	< 5.0	< 5.0
n-Butylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 10	< 5.0	< 5.0
Carbon disulfide			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 10	< 5.0	< 5.0
Carbon tetrachloride			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0
Chlorobenzene			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 2.0	< 1.0	< 1.0
Chloroethane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0	< 2.0
Chloroform			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 2.0	< 1.0	< 1.0
Chloromethane			< 2.0	< 2.0	< 2.0	< 2.0	NT	< 4.0	< 2.0	< 2.0
1,3-Dichlorobenzene			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 2.0	< 1.0	< 1.0
Dichlorodifluoromethane			< 2.0	< 2.0	< 2.0	< 2.0	NT	< 4.0	< 2.0	< 2.0
1,1-Dichloroethane			< 1.0	0.88 J	< 1.0	< 1.0	0.42 J	2.1	4.1	0.51 J
1,2-Dichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0
1,1-Dichloroethylene			6.3	50.2	30	< 1.0	23.6	39.7	51.8	22.2 C+
cis-1,2-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0
trans-1,2-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0
1,2-Dichloropropane			< 2.0	< 2.0	< 2.0	< 2.0	NT	< 4.0	< 2.0	< 2.0
1,4-Dioxane			< 25	< 25 R	< 25	< 25	NT	< 50	< 25	< 25
Ethylbenzene			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 2.0	< 1.0	< 1.0
2-Hexanone			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 10	< 5.0	< 5.0
Isopropyl benzene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 10	< 5.0	< 5.0
4-Isopropyltoluene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 10	< 5.0	< 5.0
Methyl tert-butyl ether			< 1.0	4.5 J+	2.7	< 1.0	NT	17.3	24.2	1.7 C+
Methylene chloride			< 2.0	< 2.0	< 2.0	< 2.0	NT	4.3	< 2.0	< 2.0
Naphthalene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 10	< 5.0	< 5.0
n-Propylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 10	< 5.0	< 5.0
Tert-amyl methyl ether			< 2.0	< 2.0	< 2.0	< 2.0	NT	< 4.0	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 10	< 5.0	< 5.0
Tetrachloroethylene (PCE)			200	898	692	20.3	524	685	606	438 C+
Tetrahydrofuran			< 10	< 10	< 10	< 10	NT	< 20	< 10	< 10
Toluene			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 2.0	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)			< 1.0	65.7 J+	32.6	< 1.0	26.3	69.8	121	21.9 C+
1,1,2-Trichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0
Trichloroethylene (TCE)			15.6	89.1	57.0	2.0	46.1	61.0	65.3	35.6 C+
1,2,4-Trimethylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 10	< 5.0	< 5.0
1,3,5-Trimethylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 10	< 5.0	< 5.0
Vinyl chloride			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0
m,p-Xylene			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 2.0	< 1.0	< 1.0
o-Xylene			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 2.0	< 1.0	< 1.0
Total Xylene			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 2.0	< 1.0	< 1.0
Metals	6010B	µg/l	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic										
Iron										
Manganese										
Others			NT	NT	NT	NT	NT	NT	NT	NT
Methane	8015	µg/l								
Ethane	8015	µg/l								
Ethylene	8015	µg/l								
Alkalinity	E310.1	µg/l								
Chloride	E325.3	µg/l								
Chlorine, Total Residual	E330.4	µg/l								
Nitrate & Nitrite as N	E353.2	µg/l								
Nitrogen, Nitrate	E353.2	µg/l								
Nitrogen, Nitrite	E354.1	µg/l								
Sulfate	E375.4	µg/l								
Sulfide	E376.1	µg/l								
Surfactants	E425.1	µg/l								
Total Organic Carbon	E415.1	µg/l								

Sample Location:			MW103					
Sample Name:			MW-103	MW103	MW103	MW-103	MW103	MW103
Well Screen Interval (ft bgs):			6 to 16	6 to 16	6 to 16	6 to 16	6 to 16	6 to 16
Sample Date:			5/24/06	8/7/06	10/5/06	1/16/07	1/18/07	4/13/07
Collected By:			GEI	GEI	GEI	GEI	GEI	GEI
Analyte	Method	Units						
Volatile Organic Compounds (VOCs)								
Acetone	8260	µg/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25
Benzene			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.5
Bromobenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25
Bromodichloromethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
Bromoform			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
2-Butanone (MEK)			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25
n-Butylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25
Carbon disulfide			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25
Carbon tetrachloride			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
Chlorobenzene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
Chloroethane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 10
Chloroform			< 1.0	< 1.0	< 1.0	0.65 J	0.62 J	< 5.0
Chloromethane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 10
1,3-Dichlorobenzene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
Dichlorodifluoromethane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 10
1,1-Dichloroethane			27.2	3.7	13.0	11.5	10.1	7.9
1,2-Dichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
1,1-Dichloroethylene			13.4	2.0	6.5	4.3	4.3	8.0
cis-1,2-Dichloroethylene			< 1.0	3.0	2.5	< 1.0	< 1.0	< 5.0
trans-1,2-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
1,2-Dichloropropane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 10
1,4-Dioxane			< 25	< 25	< 25 R	< 25	< 25	< 130
Ethylbenzene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
2-Hexanone			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25
Isopropyl benzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25
4-Isopropyltoluene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25
Methyl tert-butyl ether			< 1.0	< 1.0	0.65 J J+	< 1.0	< 1.0	< 5.0
Methylene chloride			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 10
Naphthalene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25
n-Propylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25
Tert-amyl methyl ether			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 10
1,1,1,2-Tetrachloroethane			< 5.0	< 5.0	< 5.0	< 5.0 F+	< 5.0	< 25
Tetrachloroethylene (PCE)			2600	592	1510	1200 F+	1250 F-	1510
Tetrahydrofuran			< 10	< 10	< 10	< 10	< 10	< 50
Toluene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
1,1,1-Trichloroethane (TCA)			34.0	4.4	14.4 J+	17.6	21.0	< 5.0
1,1,2-Trichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
Trichloroethylene (TCE)			109	24.0	60.4	37.0	38.0	58.7
1,2,4-Trimethylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25
1,3,5-Trimethylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25
Vinyl chloride			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
m,p-Xylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
o-Xylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
Total Xylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
Metals	6010B	µg/l	NT	NT	NT	NT		NT
Arsenic							< 10	
Iron							< 100	
Manganese								
Others			NT	NT	NT	NT		NT
Methane	8015	µg/l					< 10	
Ethane	8015	µg/l					< 10	
Ethylene	8015	µg/l					< 10	
Alkalinity	E310.1	µg/l					53500	
Chloride	E325.3	µg/l					675000	
Chlorine, Total Residual	E330.4	µg/l					NT	
Nitrate & Nitrite as N	E353.2	µg/l					8900	
Nitrogen, Nitrate	E353.2	µg/l					8900	
Nitrogen, Nitrite	E354.1	µg/l					16	
Sulfate	E375.4	µg/l					65700	
Sulfide	E376.1	µg/l					< 2000	
Surfactants	E425.1	µg/l					< 100	
Total Organic Carbon	E415.1	µg/l					1700	

Sample Location:			MW104															
Sample Name:			MW-104	MW104	MW104	MW104	MW104	MW104	MW104	MW104	MW104	MW104	MW104	MW104	MW104	MW104	MW104	MW104
Well Screen Interval (ft bgs):			5 to 15	5 to 15	6 to 16	5 to 15	5 to 15	5 to 15	5 to 15	5 to 15	5 to 15	5 to 15	5 to 15	5 to 15	5 to 15	5 to 15	5 to 15	5 to 15
Sample Date:			5/23/06	10/5/06	1/16/07	4/13/07	7/19/07	10/15/07	1/11/08	4/15/08	7/15/08	10/21/08	1/14/09	4/14/09	7/15/09	10/14/09	4/12/10	4/21/11
Collected By:			GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte	Method	Units																
Volatile Organic Compounds (VOCs)																		
Acetone	8260	µg/l	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	4.0 J	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0 J+	9.0
Benzene			< 0.50	0.60	< 0.50	< 0.50	NT	0.43 J	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromobenzene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromodichloromethane			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	0.31 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0
n-Butylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	0.37 J	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon disulfide			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon tetrachloride			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane			2.7	10.3	6.1	4.7	6.9	5.6	2.3	< 2.0	3.9	5.9	< 2.0	< 2.0	2.8	4.2	< 2.0	< 2.0
Chloroform			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane			< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,3-Dichlorobenzene			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	0.27 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane			< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1-Dichloroethane			33.0	98.9	57.1	46.8	68.3	86.6	38.7	33.0	71.5	74.3	33.2	37.9	47.1	73.9	19.6	24.3
1,2-Dichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethylene			3.3	9.4	2.9	10	2.6	4.5	1.7	1.8	5.1	2.4	2.6	2.1	2.2	3.6	1.9	6.1
cis-1,2-Dichloroethylene			198	435	244	250	194	279	148	145	203	192 F-	189	236 F-	212	334	112	154
trans-1,2-Dichloroethylene			2.2	9.3	6.2	3.6	2.5	4.1	3.5	2.0	3.2	2.7	2.4	3.0	2.6	2.6	1.1	6.4
1,2-Dichloropropane			< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,4-Dioxane			< 25	< 25 R	< 25	< 25	NT	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25
Ethylbenzene			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Hexanone			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropyl benzene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-Isopropyltoluene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl tert-butyl ether			< 1.0	10.0 J+	1.0	0.93 J J+	NT	7.2	1.1	0.72 J	3.9	2.4	0.63 J	< 1.0	0.98 J	1.8	< 1.0	< 1.0
Methylene chloride			< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Naphthalene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0
n-Propylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tert-amyl methyl ether			< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethylene (PCE)			60.4	160	29.3	39.6	31.2	49.3	12.1	22.4	16.8	22.8	22.6	19.3	22.0	16.9	14	14.8
Tetrahydrofuran			< 10	< 10	< 10	< 10	NT	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Toluene			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)			21.0	138 J+	23.2	5.6 J+	28.0	89.8	12.5	10.8	42.9	26.1	13.3	11.8 F+	19.2	24.3 J+	4.4	5.1
1,1,2-Trichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene (TCE)			63.4	110	49.1	51.4	40.4	< 1.0	27.0	34.9	37.1	38.2	44.8	53.7 F+	44.4	43.7	24.3	26.4
1,2,4-Trimethylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	0.34 J	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl chloride			23.7	36.4	47.4	40.4	38.2	68.0	26.4	29.9	41.8 F+	42.6	50.1	66.5	57.0	107.0	34.9	53.9
m,p-Xylene			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Xylene			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Metals	6010B	µg/l	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		
Arsenic																	NT	NT
Iron																	2900 J+	11800
Manganese																	1510	3000
Others			NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT		
Methane	8015	µg/l															159	184
Ethane	8015	µg/l															1.77	2.0
Ethylene	8015	µg/l															0.87	1.1
Alkalinity	E310.1	µg/l															338000	373000
Chloride	E325.3	µg/l															32500	189000
Chlorine, Total Residual	E330.4	µg/l															< 50 A	< 50
Nitrate & Nitrite as N	E353.2	µg/l															120	320
Nitrogen, Nitrate	E353.2	µg/l															120	320
Nitrogen, Nitrite	E354.1	µg/l															< 10	< 10
Sulfate	E375.4	µg/l															41700	45300
Sulfide	E376.1	µg/l															< 2000	< 2000
Surfactants	E425.1	µg/l															< 100	120
Total Organic Carbon	E415.1	µg/l															5900	7400

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes refer to the laboratory data reports.
2. ft bgs = feet below ground surface.
3. µg/l = micrograms per liter.
4. "<" = The analyte was not detected at a concentration above the specified reporting limit.
5. SHA = Sanborn Head & Associates.
6. Results in bold exceed the current applicable Method 1 GW2 standard.
7. FD = Field Duplicate Sample.
8. NT = Not Tested.

Qualifying Notes:

A The result is estimated due to exceedence of holding time criteria.
B The analyte found in associated method blank.
C+ The result has a high bias due to surrogate recovery above upper control limits.
E The value exceeds the calibration range.
F+ The result has a high bias due to matrix spike recovery above upper control limits.
F- The result has a low bias due to matrix spike recovery below lower control limits.
G The result is estimated due to duplicate precision outside control limits.
J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.
R The result is rejected due to gross exceedence of minimum response factor criteria.

Table 3-2
Chemical Testing Results - Groundwater
50 Tufts Street
Somerville, Massachusetts

		Sample Location:	MW105															
		Sample Name:	MW-105	MW105	MW105	MW105	MW105	MW105	MW105	MW105	MW105	MW105	MW105	MW105	MW105	MW105	MW105	MW105
		Well Screen Interval (ft bgs):	19 to 29	19 to 29	19 to 29	19 to 29	19 to 29	19 to 29	19 to 29	19 to 29	19 to 29	19 to 29	19 to 29	19 to 29	19 to 29	19 to 29	19 to 29	19 to 29
		Sample Date:	5/24/06	10/5/06	1/17/07	4/16/07	7/19/07	10/10/07	1/9/08	4/18/08	7/14/08	10/22/08	1/12/09	4/13/09	7/14/09	10/14/09	4/12/10	4/20/11
		Collected By:	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte	Method	Units																
Volatile Organic Compounds (VOCs)																		
Acetone	8260	µg/l	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0
Benzene			< 0.50	< 0.50	< 0.50	< 0.50	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromobenzene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromodichloromethane			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Butylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon disulfide			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon tetrachloride			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chloroform			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane			< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,3-Dichlorobenzene			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.59 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane			< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1-Dichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane			< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,4-Dioxane			< 25	< 25 R	< 25	< 25	NT	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25
Ethylbenzene			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Hexanone			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropyl benzene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-Isopropyltoluene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl tert-butyl ether			< 1.0	< 1.0 J+	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene chloride			< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Naphthalene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Propylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tert-amyl methyl ether			< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethylene (PCE)			7.8	0.69 J	0.67 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrahydrofuran			< 10	< 10	< 10	< 10	NT	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Toluene			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene (TCE)			< 1.0	3.4	3.2	1.5	1.5	1.6	2.2	1.7	1.7	1.8	1.7	2.3	1.6	0.78 J	1.1	1.8
1,2,4-Trimethylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl chloride			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Xylene			< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Metals	6010B	µg/l	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic																		
Iron																		
Manganese																		
Others			NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Methane	8015	µg/l																
Ethane	8015	µg/l																
Ethylene	8015	µg/l																
Alkalinity	E310.1	µg/l																
Chloride	E325.3	µg/l																
Chlorine, Total Residual	E330.4	µg/l																
Nitrate & Nitrite as N	E353.2	µg/l																
Nitrogen, Nitrate	E353.2	µg/l																
Nitrogen, Nitrite	E354.1	µg/l																
Sulfate	E375.4	µg/l																
Sulfide	E376.1	µg/l																
Surfactants	E425.1	µg/l																
Total Organic Carbon	E415.1	µg/l																

		Sample Location:	MW106						MW107						MW108					
		Sample Name:	MW106	MW106	MW106	MW106	MW106	MW106	MW107	MW107	MW107	MW107	MW107	MW107	MW108	MW108	MW108	MW108	MW108	MW108
		Well Screen Interval (ft bgs):	9 to 19	9 to 19	9 to 19	9 to 19	9 to 19	9 to 19	2 to 12	2 to 12	2 to 12	2 to 12	2 to 12	2 to 12	2 to 12	2 to 12	2 to 12	2 to 12	2 to 12	2 to 12
		Sample Date:	1/18/07	4/13/07	7/19/07	10/10/07	1/10/08	4/17/08	1/18/07	4/13/07	7/18/07	10/10/07	1/10/08	4/17/08	1/18/07	4/16/07	7/18/07	10/10/07	1/10/08	4/17/08
		Collected By:	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte	Method	Units																		
Volatile Organic Compounds (VOCs)																				
Acetone	8260	µg/l	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	69.9	< 5.0	9.2	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
Benzene			< 0.50	< 0.50	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT	< 0.50	< 0.50	< 0.50
Bromobenzene			< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
Bromodichloromethane			< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0
Bromoform			< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	0.75 J	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)			< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	7.7	< 5.0	1.1 J	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
n-Butylbenzene			< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
Carbon disulfide			< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
Carbon tetrachloride			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 G	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene			< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0
Chloroethane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0 G	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chloroform			1.1	1.2	NT	0.56 J	0.39 J	1.7	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0
Chloromethane			< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0
1,3-Dichlorobenzene			< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane			< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0
1,1-Dichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	4.6	4.3	0.52 J	< 1.0	2.1	3.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethylene			4.4	6.3	3.4	3.9	4.1	1.5	3.2	3.7	< 1.0	< 1.0	1.3 G	2.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane			< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0
1,4-Dioxane			< 25	< 25	NT	< 25	< 25	< 25	< 25	< 25	NT	< 25	< 25	< 25	< 25	< 25	NT	< 25	< 25	< 25
Ethylbenzene			< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0
2-Hexanone			< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
Isopropyl benzene			< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
4-Isopropyltoluene			< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
Methyl tert-butyl ether			12.2	12.1	NT	252	78.0	4.9	< 1.0	< 1.0	NT	< 1.0	0.21 J	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0
Methylene chloride			< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0
Naphthalene			< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
n-Propylbenzene			< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
Tert-amyl methyl ether			< 2.0	< 2.0	NT	< 2.0	2.2	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane			< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
Tetrachloroethylene (PCE)			1.0 F-	1.2	2.3	1.7	2.3	0.44 J	< 1.0 F-	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 F-	< 1.0	< 1.0	0.60 J	< 1.0	< 1.0
Tetrahydrofuran			< 10	< 10	NT	< 10	< 10	< 10	< 10	< 10	NT	< 10	< 10	< 10	< 10	< 10	NT	< 10	< 10	< 10
Toluene			< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	110	0.40 J	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)			15.3	1.5 J+	6.4	11.3	14.9	2.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene (TCE)			3.7	4.8	3.6	4.4	4.9	1.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene			< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene			< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
Vinyl chloride			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene			< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0
o-Xylene			< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0
Total Xylene			< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0
Metals	6010B	µg/l		NT	NT	NT	NT	NT		NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
Arsenic			< 10						< 10						< 10					
Iron			319						6160						< 100					
Manganese																				
Others				NT	NT	NT	NT	NT		NT	NT	NT	NT	NT		NT	NT	NT	NT	NT
Methane	8015	µg/l	< 10						4.13 J						0.18 J					
Ethane	8015	µg/l	< 10						< 10						< 10					
Ethylene	8015	µg/l	< 10						< 10						< 10					
Alkalinity	E310.1	µg/l	83100						174000						71100					
Chloride	E325.3	µg/l	1870000						100000						235000					
Chlorine, Total Residual	E330.4	µg/l	NT						NT						NT					
Nitrate & Nitrite as N	E353.2	µg/l	12900						100						< 100					
Nitrogen, Nitrate	E353.2	µg/l	12800						< 110						< 110					
Nitrogen, Nitrite	E354.1	µg/l	83						< 10						< 10					
Sulfate	E375.4	µg/l	86800						33400						28100					
Sulfide	E376.1	µg/l	< 2000						< 2000						< 2000					
Surfactants	E425.1	µg/l	< 100						150						< 100					
Total Organic Carbon	E415.1	µg/l	1300						12200						1300					

General Notes:
1. Analytes detected in at least one sample are reported here. For a complete list of analytes refer to the laboratory data reports.
2. ft bgs = feet below ground surface.
3. µg/l = micrograms per liter.
4. "<" = The analyte was not detected at a concentration above the specified reporting limit.
5. SHA = Sanborn Head & Associates.
6. Results in bold exceed the current applicable Method 1 GW2 standard.
7. FD = Field Duplicate Sample.
8. NT = Not Tested.

Qualifying Notes:

A	The result is estimated due to exceedence of holding time criteria.
B	The analyte found in associated method blank.
C+	The result has a high bias due to surrogate recovery above upper control limits.
E	The value exceeds the calibration range.
F+	The result has a high bias due to matrix spike recovery above upper control limits.
F-	The result has a low bias due to matrix spike recovery below lower control limits.
G	The result is estimated due to duplicate precision outside control limits.
J	The reported result is below the laboratory reporting limit and is estimated.
J+	The reported result is estimated.
R	The result is rejected due to gross exceedence of minimum response factor criteria.

Table 3-2

Chemical Testing Results - Groundwater

50 Tufts Street
Somerville, Massachusetts

Sample Location:			MW109			MW110		
Sample Name:			MW109	MW109	MW109	MW110	MW110	MW110
Well Screen Interval (ft bgs):			3 to 13	3 to 13	3 to 13	3 to 13	3 to 13	3 to 13
Sample Date:			1/18/07	4/16/07	4/17/08	1/18/07	4/17/07	5/23/07
Collected By:			GEI	GEI	GEI	GEI	GEI	GEI
Analyte	Method	Units						
Volatile Organic Compounds (VOCs)								
Acetone	8260	µg/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT
Benzene			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT
Bromobenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT
Bromodichloromethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT
Bromoform			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT
2-Butanone (MEK)			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT
n-Butylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT
Carbon disulfide			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT
Carbon tetrachloride			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT
Chlorobenzene			< 1.0	< 1.0	0.28 J	< 1.0	< 1.0	NT
Chloroethane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT
Chloroform			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT
Chloromethane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT
1,3-Dichlorobenzene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT
Dichlorodifluoromethane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT
1,1-Dichloroethane			1.2	< 1.0	< 1.0	< 1.0	< 1.0	NT
1,2-Dichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT
1,1-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT
cis-1,2-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT
trans-1,2-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT
1,2-Dichloropropane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT
1,4-Dioxane			< 25	< 25	< 25	< 25	< 25	NT
Ethylbenzene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT
2-Hexanone			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT
Isopropyl benzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT
4-Isopropyltoluene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT
Methyl tert-butyl ether			3.5	< 1.0	< 1.0	< 1.0	< 1.0	NT
Methylene chloride			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT
Naphthalene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT
n-Propylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT
Tert-amyl methyl ether			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT
1,1,1,2-Tetrachloroethane			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT
Tetrachloroethylene (PCE)			178 F-	28.5	17.4	0.89 J F-	0.93 J	NT
Tetrahydrofuran			< 10	< 10	< 10	< 10	< 10	NT
Toluene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT
1,1,1-Trichloroethane (TCA)			0.77 J	0.97 J	0.31 J	< 1.0	< 1.0	NT
1,1,2-Trichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT
Trichloroethylene (TCE)			4.5	< 1.0	0.52 J	< 1.0	< 1.0	NT
1,2,4-Trimethylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT
1,3,5-Trimethylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT
Vinyl chloride			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT
m,p-Xylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT
o-Xylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT
Total Xylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT
Metals	6010B	µg/l	NT	NT	NT		NT	NT
Arsenic						2.9		
Iron						84000		
Manganese								
Others			NT	NT	NT		NT	
Methane	8015	µg/l				< 10		NT
Ethane	8015	µg/l				< 10		NT
Ethylene	8015	µg/l				< 10		NT
Alkalinity	E310.1	µg/l				122000		NT
Chloride	E325.3	µg/l				142000		1010000
Chlorine, Total Residual	E330.4	µg/l				NT		< 50
Nitrate & Nitrite as N	E353.2	µg/l				2400		NT
Nitrogen, Nitrate	E353.2	µg/l				2300		NT
Nitrogen, Nitrite	E354.1	µg/l				54		NT
Sulfate	E375.4	µg/l				47700		NT
Sulfide	E376.1	µg/l				< 2000		NT
Surfactants	E425.1	µg/l				< 100		NT
Total Organic Carbon	E415.1	µg/l				5700		NT

Sample Location:	MW111					
Sample Name:	MW111	MW111	MW111	MW111	MW111	MW111
Well Screen Interval (ft bgs):	4 to 14	4 to 14	4 to 14	4 to 14	4 to 14	4 to 14
Sample Date:	1/18/07	4/16/07	7/18/07	10/10/07	1/10/08	4/17/08
Collected By:	GEI	GEI	GEI	GEI	GEI	GEI
Analyte						
Volatile Organic Compounds (VOCs)						
Acetone	< 50	< 130	NT	< 250	< 5.0	< 10
Benzene	< 5.0	< 13	NT	< 25	< 0.50	< 1.0
Bromobenzene	< 50	< 130	NT	< 250	< 5.0	< 10
Bromodichloromethane	< 10	< 25	NT	< 50	< 1.0	< 2.0
Bromoform	< 10	< 25	NT	< 50	< 1.0	< 2.0
2-Butanone (MEK)	< 50	< 130	NT	< 250	< 5.0	< 10
n-Butylbenzene	< 50	< 130	NT	< 250	< 5.0	< 10
Carbon disulfide	< 50	< 130	NT	< 250	< 5.0	< 10
Carbon tetrachloride	< 10	< 25	< 1.0	< 50	< 1.0	< 2.0
Chlorobenzene	< 10	< 25	NT	< 50	< 1.0	< 2.0
Chloroethane	< 20	< 50	< 2.0	< 100	< 2.0	< 4.0
Chloroform	< 10	< 25	NT	< 50	1.2	< 2.0
Chloromethane	< 20	< 50	NT	< 100	< 2.0	< 4.0
1,3-Dichlorobenzene	< 10	< 25	NT	< 50	< 1.0	< 2.0
Dichlorodifluoromethane	< 20	< 50	NT	< 100	< 2.0	< 4.0
1,1-Dichloroethane	30.9	15.7 J	16.8	19.1 J	5.6	4.3 C+
1,2-Dichloroethane	< 10	< 25	0.43 J	< 50	< 1.0	< 2.0
1,1-Dichloroethylene	17.6	< 25	10.5	< 50	4.1	3.7 C+
cis-1,2-Dichloroethylene	22.6	17.2 J	56.3	63.9	10.6	4.4 C+
trans-1,2-Dichloroethylene	< 10	< 25	1.5	< 50	< 1.0	< 2.0
1,2-Dichloropropane	< 20	< 50	NT	< 100	< 2.0	< 4.0
1,4-Dioxane	< 250	< 630	NT	< 1300	< 25	< 50
Ethylbenzene	< 10	< 25	NT	< 50	< 1.0	< 2.0
2-Hexanone	< 50	< 130	NT	< 250	< 5.0	< 10
Isopropyl benzene	< 50	< 130	NT	< 250	< 5.0	< 10
4-Isopropyltoluene	< 50	< 130	NT	< 250	< 5.0	< 10
Methyl tert-butyl ether	< 10	< 25	NT	< 50	0.45 J	< 2.0
Methylene chloride	< 20	31.4 J	NT	< 100	< 2.0	< 4.0
Naphthalene	< 50	< 130	NT	< 250	< 5.0	< 10
n-Propylbenzene	< 50	< 130	NT	< 250	< 5.0	< 10
Tert-amyl methyl ether	< 20	< 50	NT	< 100	< 2.0	< 4.0
1,1,1,2-Tetrachloroethane	< 50	< 130	NT	< 250	< 5.0	< 10
Tetrachloroethylene (PCE)	13700 F-	7370	6340	8350	3100	1160 C+
Tetrahydrofuran	< 100	< 250	NT	< 500	< 10	< 20
Toluene	< 10	< 25	NT	< 50	< 1.0	< 2.0
1,1,1-Trichloroethane (TCA)	142	56.5	89.1	84.1	41.3	17.6 C+
1,1,2-Trichloroethane	< 10	< 25	< 1.0	< 50	< 1.0	< 2.0
Trichloroethylene (TCE)	150	84.4	120	125	42.1	19.9 C+
1,2,4-Trimethylbenzene	< 50	< 130	NT	< 250	< 5.0	< 10
1,3,5-Trimethylbenzene	< 50	< 130	NT	< 250	< 5.0	< 10
Vinyl chloride	< 10	< 25	< 1.0	< 50	< 1.0	< 2.0
m,p-Xylene	< 10	< 25	NT	< 50	< 1.0	< 2.0
o-Xylene	< 10	< 25	NT	< 50	< 1.0	< 2.0
Total Xylene	< 10	< 25	NT	< 50	< 1.0	< 2.0
Metals	NT	NT	NT	NT	NT	NT
Arsenic						
Iron						
Manganese						
Others	NT	NT	NT	NT	NT	NT
Methane						
Ethane						
Ethylene						
Alkalinity						
Chloride						
Chlorine, Total Residual						
Nitrate & Nitrite as N						
Nitrogen, Nitrate						
Nitrogen, Nitrite						
Sulfate						
Sulfide						
Surfactants						
Total Organic Carbon						

Sample Location:	MW112A									
Sample Name:	MW112A	MW112A	MW112A	MW112A	MW112A	MW112A	MW112A	MW900 (FD)	MW112A	MW901 (FD)
Well Screen Interval (ft bgs):	4 to 19	4 to 19	4 to 19	4 to 19	4 to 19	4 to 19	4 to 19	4 to 19	4 to 19	4 to 19
Sample Date:	3/23/07	4/16/07	7/18/07	10/10/07	1/10/08	4/17/08	7/14/08	7/14/08	10/22/08	10/22/08
Collected By:	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte										
Volatile Organic Compounds (VOCs)										
Acetone	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	< 0.50	< 0.50	NT	< 0.50	0.34 J	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromobenzene	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromodichloromethane	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Butylbenzene	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon disulfide	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon tetrachloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chloroform	0.35 J	< 1.0	NT	< 1.0	0.32 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0 J+	< 2.0 J+
1,3-Dichlorobenzene	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane	< 2.0 J+	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1-Dichloroethane	27.6	24.0	6.4	35.6	114	40.9 C+	31.5	31.2	43.7	44.6
1,2-Dichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethylene	19.7	10.8	6.7	19.7	82.4	36.6 C+	24.5	24.5	39.1	39.3
cis-1,2-Dichloroethylene	< 1.0	0.54 J	0.98 J	4.2	18.7	55.3 C+	81.5	80.9	214	212
trans-1,2-Dichloroethylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,4-Dioxane	< 25	< 25	NT	< 25	< 25	< 25	< 25	< 25	< 25	< 25
Ethylbenzene	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Hexanone	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropyl benzene	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-Isopropyltoluene	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl tert-butyl ether	10.8	13.8	NT	20.3	87.0	20.5 C+	14.9	13.5	32.4	32.2
Methylene chloride	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Naphthalene	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Propylbenzene	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tert-amyl methyl ether	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethylene (PCE)	261	198	144	159	359	202 C+	165	164	226	228
Tetrahydrofuran	< 10	< 10	NT	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Toluene	0.54 J	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)	1.3	0.96 J	0.68 J	1.4	5.8	1.9 C+	1.3	1.2	5.6	5.7
1,1,2-Trichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene (TCE)	34.0	36.1	26.7	61.3	142	72.8 C+	46.1	44.3	54.9	55.9
1,2,4-Trimethylbenzene	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl chloride	0.84 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Xylene	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Metals	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic										
Iron										
Manganese										
Others	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Methane										
Ethane										
Ethylene										
Alkalinity										
Chloride										
Chlorine, Total Residual										
Nitrate & Nitrite as N										
Nitrogen, Nitrate										
Nitrogen, Nitrite										
Sulfate										
Sulfide										
Surfactants										
Total Organic Carbon										

Sample Location:	MW112A					
Sample Name:	MW112A	MW900 (FD)	MW112A	MW901 (FD)	MW112A	MW901 (FD)
Well Screen Interval (ft bgs):	4 to 19	4 to 19	4 to 19	4 to 19	4 to 19	4 to 19
Sample Date:	1/12/09	1/12/09	4/13/09	4/13/09	7/14/09	7/14/09
Collected By:	GEI	GEI	GEI	GEI	GEI	GEI
Analyte						
Volatile Organic Compounds (VOCs)						
Acetone	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 F+	< 5.0 F+
Benzene	0.26 J	0.27 J	0.36 J	0.28 J	< 0.50 F-	< 0.50 F-
Bromobenzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+
Bromodichloromethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Butylbenzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+
Carbon disulfide	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon tetrachloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chloroform	0.23 J	0.24 J	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,3-Dichlorobenzene	0.36 J	0.35 J	< 1.0	< 1.0	< 1.0	< 1.0 J+
Dichlorodifluoromethane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1-Dichloroethane	70.9	70.7	109	89.6	99.3	107
1,2-Dichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethylene	61.7	61.7	89.2	73.0	91.4	97.7
cis-1,2-Dichloroethylene	225	224	296	247	311	380
trans-1,2-Dichloroethylene	< 1.0	< 1.0	7.9 G	2.5 G	< 1.0	< 1.0
1,2-Dichloropropane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,4-Dioxane	< 25	< 25	< 25	< 25	< 25	< 25
Ethylbenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Hexanone	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropyl benzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+
4-Isopropyltoluene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+
Methyl tert-butyl ether	33.3	32.9	29.9	23.3	41.4	46.0
Methylene chloride	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Naphthalene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+
n-Propylbenzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+
Tert-amyl methyl ether	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethylene (PCE)	287	290	290 G	384	359	360
Tetrahydrofuran	< 10	< 10	< 10	< 10	< 10 F+	< 10 F+
Toluene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)	3.3	3.2	3.9	3.1	3.8	4.0
1,1,2-Trichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene (TCE)	88.2	87.9	140	114	137	139
1,2,4-Trimethylbenzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+
1,3,5-Trimethylbenzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 F-	< 5.0 F-
Vinyl chloride	0.42 J	0.43 J	< 1.0	< 1.0	1.2	1.3
m,p-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Metals	NT	NT	NT	NT	NT	NT
Arsenic						
Iron						
Manganese						
Others	NT	NT	NT	NT	NT	NT
Methane						
Ethane						
Ethylene						
Alkalinity						
Chloride						
Chlorine, Total Residual						
Nitrate & Nitrite as N						
Nitrogen, Nitrate						
Nitrogen, Nitrite						
Sulfate						
Sulfide						
Surfactants						
Total Organic Carbon						

Sample Location:	MW112A						
Sample Name:	MW112A	MW900 (FD)	MW112A	MW900 (FD)	MW112A	MW112A	MW900 (FD)
Well Screen Interval (ft bgs):	4 to 19	4 to 19	4 to 19	4 to 19	4 to 19	4 to 19	4 to 19
Sample Date:	10/14/09	10/14/09	4/12/10	4/12/10	10/27/10	4/20/11	4/20/11
Collected By:	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte							
Volatile Organic Compounds (VOCs)							
Acetone	< 5.0	< 5.0	< 5.0 J+	< 5.0 J+	< 5.0	< 10	< 10
Benzene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 1.0
Bromobenzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 10
Bromodichloromethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0
Bromoform	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0
2-Butanone (MEK)	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 10
n-Butylbenzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 10
Carbon disulfide	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 10
Carbon tetrachloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0
Chlorobenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0
Chloroethane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 4.0
Chloroform	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0
Chloromethane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 4.0
1,3-Dichlorobenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0
Dichlorodifluoromethane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 4.0
1,1-Dichloroethane	137	142	83.8	88.3	85.5	38.1	38.8
1,2-Dichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0
1,1-Dichloroethylene	123	130	74.9	78.6	89.1	57.9	53.0
cis-1,2-Dichloroethylene	390	373	165	196	214	143	140
trans-1,2-Dichloroethylene	< 1.0	< 1.0	< 1.0	< 1.0	5.9	< 2.0	< 2.0
1,2-Dichloropropane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 4.0
1,4-Dioxane	< 25	< 25	< 25	< 25	< 25	< 50	< 50
Ethylbenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0
2-Hexanone	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 10
Isopropyl benzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 10
4-Isopropyltoluene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 10
Methyl tert-butyl ether	77.5	81.4	15.9	20.3	50.3	9.2	9.1
Methylene chloride	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 4.0
Naphthalene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 10
n-Propylbenzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 10
Tert-amyl methyl ether	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 4.0
1,1,1,2-Tetrachloroethane	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 10
Tetrachloroethylene (PCE)	393	405	481	477	561	415	409
Tetrahydrofuran	< 10	< 10	< 10	< 10	< 10	< 20	< 20
Toluene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0
1,1,1-Trichloroethane (TCA)	4.2 J+	4.4 J+	3.4	3.4	4.3	7.5	< 2.0
1,1,2-Trichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0
Trichloroethylene (TCE)	194	198.0	173	179	181	110	108
1,2,4-Trimethylbenzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 10
1,3,5-Trimethylbenzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 10
Vinyl chloride	1.0	1.5	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0
m,p-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0
o-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0
Total Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0
Metals	NT	NT		NT	NT		NT
Arsenic			NT			NT	
Iron			< 0.10 J+			NT	
Manganese			875			1570	
Others	NT	NT		NT	NT		NT
Methane			0.18 J B			< 0.30	
Ethane			< 0.10			< 0.10	
Ethylene			< 0.10			< 0.10	
Alkalinity			233000			252000	
Chloride			810000			915000	
Chlorine, Total Residual			< 50 A			< 50	
Nitrate & Nitrite as N			4700			3500	
Nitrogen, Nitrate			4700			3500	
Nitrogen, Nitrite			11			< 10	
Sulfate			57100			52200	
Sulfide			< 2000			< 2000	
Surfactants			< 100			< 100	
Total Organic Carbon			1200			1100	

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes refer to the laboratory data reports.
2. ft bgs = feet below ground surface.
3. µg/l = micrograms per liter.
4. "<" = The analyte was not detected at a concentration above the specified reporting limit.
5. SHA = Sanborn Head & Associates.
6. Results in bold exceed the current applicable Method 1 GW2 standard.
7. FD = Field Duplicate Sample.
8. NT = Not Tested.

Qualifying Notes:

A	The result is estimated due to exceedence of holding time criteria.
B	The analyte found in associated method blank.
C+	The result has a high bias due to surrogate recovery above upper control limits.
E	The value exceeds the calibration range.
F+	The result has a high bias due to matrix spike recovery above upper control limits.
F-	The result has a low bias due to matrix spike recovery below lower control limits.
G	The result is estimated due to duplicate precision outside control limits.
J	The reported result is below the laboratory reporting limit and is estimated.
J+	The reported result is estimated.
R	The result is rejected due to gross exceedence of minimum response factor criteria.

Table 3-2
Chemical Testing Results - Groundwater
50 Tufts Street
Somerville, Massachusetts

		Sample Location:	MW113									
		Sample Name:	MW113	MW113	MW113	MW900 (FD)	MW113	MW900 (FD)	MW113	MW900 (FD)	MW113	MW900 (FD)
		Well Screen Interval (ft bgs):	10 to 20	10 to 20	10 to 20	10 to 20	10 to 20	10 to 20	10 to 20	10 to 20	10 to 20	10 to 20
		Sample Date:	2/20/07	4/12/07	7/18/07	7/18/07	10/10/07	10/10/07	1/11/08	1/11/08	4/15/08	4/15/08
		Collected By:	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte	**Method**	**Units**										
Volatile Organic Compounds (VOCs)												
Acetone	8260	µg/l	< 5.0	3.8 J	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene			< 0.50	< 0.50	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromobenzene			< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromodichloromethane			< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform			< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)			< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Butylbenzene			< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon disulfide			< 5.0	0.66 J	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon tetrachloride			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene			< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chloroform			< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane			< 2.0	< 2.0	NT	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,3-Dichlorobenzene			< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane			< 2.0	< 2.0	NT	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1-Dichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.43 J	0.33 J
cis-1,2-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane			< 2.0	< 2.0	NT	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,4-Dioxane			< 25	< 25	NT	NT	< 25	< 25	< 25	< 25	< 25	< 25
Ethylbenzene			< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Hexanone			< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropyl benzene			< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-Isopropyltoluene			< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl tert-butyl ether			< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene chloride			< 2.0	< 2.0	NT	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Naphthalene			< 5.0	1.2 J	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Propylbenzene			< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tert-amyl methyl ether			< 2.0	< 2.0	NT	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane			< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethylene (PCE)			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.84 J	< 1.0	< 1.0	< 1.0	< 1.0
Tetrahydrofuran			< 10	< 10	NT	NT	< 10	< 10	< 10	< 10	< 10	< 10
Toluene			0.44 J	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene (TCE)			< 1.0	0.82 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene			< 5.0	0.45 J	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene			< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl chloride			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene			< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene			< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Xylene			< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Metals	6010B	µg/l	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic												
Iron												
Manganese												
Others			NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Methane	8015	µg/l										
Ethane	8015	µg/l										
Ethylene	8015	µg/l										
Alkalinity	E310.1	µg/l										
Chloride	E325.3	µg/l										
Chlorine, Total Residual	E330.4	µg/l										
Nitrate & Nitrite as N	E353.2	µg/l										
Nitrogen, Nitrate	E353.2	µg/l										
Nitrogen, Nitrite	E354.1	µg/l										
Sulfate	E375.4	µg/l										
Sulfide	E376.1	µg/l										
Surfactants	E425.1	µg/l										
Total Organic Carbon	E415.1	µg/l										

Sample Location:	MW114						MW115					
Sample Name:	MW114	MW114	MW114	MW114	MW114	MW114	MW115	MW115	MW115 R	MW115	MW115	MW115 R
Well Screen Interval (ft bgs):	7 to 17	7 to 17	7 to 17	7 to 17	7 to 17	7 to 17	10 to 25	10 to 25	10 to 25	10 to 25	10 to 25	10 to 25
Sample Date:	2/20/07	4/13/07	7/18/07	10/10/07	1/11/08	4/17/08	3/23/07	4/13/07	7/18/07	10/10/07	1/9/08	4/17/08
Collected By:	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte												
Volatile Organic Compounds (VOCs)												
Acetone	< 5.0	< 5.0	NT	< 5.0	< 5.0	2.1 J	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
Benzene	< 0.50	< 0.50	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT	< 0.50	< 0.50	< 0.50
Bromobenzene	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
Bromodichloromethane	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0
Bromoform	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
n-Butylbenzene	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
Carbon disulfide	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
Carbon tetrachloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0
Chloroethane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chloroform	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0
Chloromethane	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0
1,3-Dichlorobenzene	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0 J+	< 2.0	NT	< 2.0	< 2.0	< 2.0
1,1-Dichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0
1,4-Dioxane	< 25	< 25	NT	< 25	< 25	< 25	< 25 J+	< 25	NT	< 25	< 25	< 25
Ethylbenzene	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0
2-Hexanone	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
Isopropyl benzene	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
4-Isopropyltoluene	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
Methyl tert-butyl ether	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0
Methylene chloride	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0
Naphthalene	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
n-Propylbenzene	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
Tert-amyl methyl ether	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
Tetrachloroethylene (PCE)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrahydrofuran	< 10	< 10	NT	< 10	< 10	< 10	< 10	< 10	NT	< 10	< 10	< 10
Toluene	0.34 J	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene (TCE)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0
Vinyl chloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0
o-Xylene	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0
Total Xylene	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Metals	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic												
Iron												
Manganese												
Others	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Methane												
Ethane												
Ethylene												
Alkalinity												
Chloride												
Chlorine, Total Residual												
Nitrate & Nitrite as N												
Nitrogen, Nitrate												
Nitrogen, Nitrite												
Sulfate												
Sulfide												
Surfactants												
Total Organic Carbon												

Sample Location:	MW116											
Sample Name:	MW116	MW116	MW116	MW901 (FD)	MW116	MW901 (FD)	MW116	MW901 (FD)	MW116	MW901 (FD)	MW116	MW116
Well Screen Interval (ft bgs):	5 to 15	5 to 15	5 to 15	5 to 15	5 to 15	5 to 15	5 to 15	5 to 15	5 to 15	5 to 15	5 to 15	5 to 15
Sample Date:	3/23/07	4/16/07	7/18/07	7/18/07	10/12/07	10/12/07	1/11/08	1/11/08	4/15/08	4/15/08	7/16/08	10/21/08
Collected By:	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte												
Volatile Organic Compounds (VOCs)												
Acetone	< 5.0	< 5.0	NT	NT	< 10 J+	< 10 J+	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 10	< 5.0
Benzene	0.24 J	< 0.50	NT	NT	< 1.0	< 1.0	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 0.50
Bromobenzene	< 5.0	< 5.0	NT	NT	< 10	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0
Bromodichloromethane	< 1.0	< 1.0	NT	NT	1.1 J	0.99 J	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
Bromoform	< 1.0	< 1.0	NT	NT	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
2-Butanone (MEK)	< 5.0	< 5.0	NT	NT	< 10 J+	< 10 J+	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 10	< 5.0
n-Butylbenzene	< 5.0	< 5.0	NT	NT	< 10	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0
Carbon disulfide	< 5.0	< 5.0	NT	NT	< 10	< 10	< 5.0	< 5.0	< 5.0	< 5.0	2.9 J	< 5.0
Carbon tetrachloride	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
Chlorobenzene	< 1.0	< 1.0	NT	NT	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
Chloroethane	< 2.0	< 2.0	2.4	2.3	2.4 J	2.4 J	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0
Chloroform	< 1.0	< 1.0	NT	NT	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
Chloromethane	< 2.0	< 2.0	NT	NT	< 4.0	< 4.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0
1,3-Dichlorobenzene	< 1.0	< 1.0	NT	NT	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
Dichlorodifluoromethane	< 2.0 J+	< 2.0	NT	NT	< 4.0 J+	< 4.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0 J+	< 2.0
1,1-Dichloroethane	135	4.4	97.3	96.9	80.1	79.3	18.9	15.6	66.8	64.5	114	109
1,2-Dichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0	< 1.0	< 1.0	0.23 J	0.20 J	< 2.0	< 1.0
1,1-Dichloroethylene	107	2.7	33.8	34.0	24.8	22.4	14.7	11.8	46.3	45.7	78.4	79.8
cis-1,2-Dichloroethylene	103	21.7	415	431	346	341	49.5	42.9	105	102	286	319
trans-1,2-Dichloroethylene	1.8	< 1.0	4.3	4.4	2.5	2.4	0.88 J	1.3	< 1.0	< 1.0	< 2.0	1.3
1,2-Dichloropropane	< 2.0	< 2.0	NT	NT	< 4.0	< 4.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0
1,4-Dioxane	< 25	< 25	NT	NT	< 50	< 50	< 25	< 25	< 25	< 25	< 50	< 25
Ethylbenzene	< 1.0	< 1.0	NT	NT	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
2-Hexanone	< 5.0	< 5.0	NT	NT	< 10 J+	< 10 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0
Isopropyl benzene	< 5.0	< 5.0	NT	NT	< 10 J+	< 10 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0
4-Isopropyltoluene	< 5.0	< 5.0	NT	NT	< 10	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0
Methyl tert-butyl ether	12.3	0.40 J	NT	NT	12.5	12.7	2.1 J+	1.3 J+	7.1	6.9	18.2	18.0
Methylene chloride	< 2.0	< 2.0	NT	NT	< 4.0	< 4.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0
Naphthalene	< 5.0	< 5.0	NT	NT	< 10	< 10	< 5.0	0.68 J	< 5.0	< 5.0	< 10	< 5.0
n-Propylbenzene	< 5.0	< 5.0	NT	NT	< 10	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0
Tert-amyl methyl ether	< 2.0	< 2.0	NT	NT	< 4.0	< 4.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0
1,1,1,2-Tetrachloroethane	< 5.0	< 5.0	NT	NT	< 10	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0
Tetrachloroethylene (PCE)	1180	32.2	167	168	116	110	267	257 J+	603	607	864	839
Tetrahydrofuran	30.6	13.8	NT	NT	< 20	< 20	< 10	< 10	< 10	< 10	< 20	< 10
Toluene	< 1.0	< 1.0	NT	NT	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
1,1,1-Trichloroethane (TCA)	21.6	0.67 J	10.6	10.7	9.4	9.2	3.3	2.5	10.7	10.7	16.0	15.6
1,1,2-Trichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
Trichloroethylene (TCE)	358	19.4	72.7	73.2	136	129	66.3	53.6	175	174	257	269
1,2,4-Trimethylbenzene	< 5.0	< 5.0	NT	NT	< 10	< 10	< 5.0	0.69 J	< 5.0	< 5.0	< 10	< 5.0
1,3,5-Trimethylbenzene	< 5.0	< 5.0	NT	NT	< 10	< 10	< 5.0	0.24 J	< 5.0	< 5.0	< 10	< 5.0
Vinyl chloride	14.1	3.2	185	182	84.9	76.4	3.1	2.3	2.6	2.7	7.2	21.3
m,p-Xylene	< 1.0	< 1.0	NT	NT	< 2.0	< 2.0	< 1.0	1.2	< 1.0	< 1.0	< 2.0	< 1.0
o-Xylene	< 1.0	< 1.0	NT	NT	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
Total Xylene	< 1.0	< 1.0	NT	NT	< 2.0	< 2.0	< 1.0	1.2	< 1.0	< 1.0	< 2.0	< 1.0
Metals	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic												
Iron												
Manganese												
Others	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Methane												
Ethane												
Ethylene												
Alkalinity												
Chloride												
Chlorine, Total Residual												
Nitrate & Nitrite as N												
Nitrogen, Nitrate												
Nitrogen, Nitrite												
Sulfate												
Sulfide												
Surfactants												
Total Organic Carbon												

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes refer to the laboratory data reports.
2. ft bgs = feet below ground surface.
3. µg/l = micrograms per liter.
4. "<" = The analyte was not detected at a concentration above the specified reporting limit.
5. SHA = Sanborn Head & Associates.
6. Results in bold exceed the current applicable Method 1 GW2 standard.
7. FD = Field Duplicate Sample.
8. NT = Not Tested.

Qualifying Notes:

A	The result is estimated due to exceedence of holding time criteria.
B	The analyte found in associated method blank.
C+	The result has a high bias due to surrogate recovery above upper control limits.
E	The value exceeds the calibration range.
F+	The result has a high bias due to matrix spike recovery above upper control limits.
F-	The result has a low bias due to matrix spike recovery below lower control limits.
G	The result is estimated due to duplicate precision outside control limits.
J	The reported result is below the laboratory reporting limit and is estimated.
J+	The reported result is estimated.
R	The result is rejected due to gross exceedence of minimum response factor criteria.

Table 3-2
Chemical Testing Results - Groundwater
50 Tufts Street
Somerville, Massachusetts

Sample Location:			MW116 (continued)							
Sample Name:			MW116	MW116	MW116	MW116	MW116	MW901 (FD)	MW116	MW901 (FD)
Well Screen Interval (ft bgs):			5 to 15	5 to 15	5 to 15	5 to 15	5 to 15	5 to 15	5 to 15	5 to 15
Sample Date:			1/14/09	4/15/09	7/14/09	10/14/09	4/13/10	4/13/10	4/21/11	4/21/11
Collected By:			GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte	Method	Units								
Volatile Organic Compounds (VOCs)										
Acetone	8260	µg/l	< 10	< 5.0	< 10 F+	< 10	< 25	< 5.0	< 5.0	< 5.0
Benzene			< 1.0	< 0.50	< 1.0	< 1.0	< 2.5	< 0.50	< 0.50	< 0.50
Bromobenzene			< 10	< 5.0 J+	< 10 J+	< 10	< 25	< 5.0	< 5.0	< 5.0
Bromodichloromethane			< 2.0	< 1.0	< 2.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0
Bromoform			< 2.0 J+	< 1.0	< 2.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)			< 10	< 5.0	< 10	< 10	< 25	< 5.0	< 5.0	< 5.0
n-Butylbenzene			< 10	< 5.0 J+	< 10 J+	< 10	< 25	< 5.0	< 5.0	< 5.0
Carbon disulfide			< 10	< 5.0	< 10	< 10	< 25	< 5.0	< 5.0	< 5.0
Carbon tetrachloride			< 2.0	< 1.0	< 2.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0
Chlorobenzene			< 2.0	< 1.0	< 2.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0
Chloroethane			< 4.0	< 2.0	< 4.0	< 4.0	< 10	< 2.0	< 2.0	< 2.0
Chloroform			< 2.0	< 1.0	< 2.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0
Chloromethane			< 4.0	< 2.0	< 4.0	< 4.0	< 10	< 2.0	< 2.0	< 2.0
1,3-Dichlorobenzene			< 2.0	< 1.0 J+	< 2.0 J+	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane			< 4.0	< 2.0	< 4.0	< 4.0	< 10 J+	< 2.0	< 2.0	< 2.0
1,1-Dichloroethane			72.5	101	69.7	92.2	63.9	68.9	27.8	23.4
1,2-Dichloroethane			< 2.0	< 1.0	< 2.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethylene			56.5	70.6	35.2	68.8	49.1	51.9	22.4	14.1
cis-1,2-Dichloroethylene			146	84.1	92.7	133	80.7	92.1	84.6	68.3
trans-1,2-Dichloroethylene			< 2.0	< 1.0	< 2.0	< 2.0	< 5.0	1.6	1.6	1.8
1,2-Dichloropropane			< 4.0	< 2.0	< 4.0	< 4.0	< 10	< 2.0	< 2.0	< 2.0
1,4-Dioxane			< 50	< 25	< 50 F-	< 50	< 130	< 25	< 25	< 25
Ethylbenzene			< 2.0	< 1.0	< 2.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0
2-Hexanone			< 10	< 5.0	< 10	< 10	< 25	< 5.0	< 5.0	< 5.0
Isopropyl benzene			< 10	< 5.0 J+	< 10 J+	< 10	< 25	< 5.0	< 5.0	< 5.0
4-Isopropyltoluene			< 10	< 5.0 J+	< 10 J+	< 10	< 25	< 5.0	< 5.0	< 5.0
Methyl tert-butyl ether			9.0	11.7	7.2	8.4	5.4	5.9	4.4	4.4
Methylene chloride			< 4.0	< 2.0	< 4.0	< 4.0	< 10	< 2.0	< 2.0	< 2.0
Naphthalene			< 10	< 5.0 J+	< 10 J+	< 10	< 25	< 5.0	< 5.0	< 5.0
n-Propylbenzene			< 10	< 5.0 J+	< 10 J+	< 10	< 25	< 5.0	< 5.0	< 5.0
Tert-amyl methyl ether			< 4.0	< 2.0	< 4.0	< 4.0	< 10	< 2.0	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane			< 10	< 5.0	< 10	< 10	< 25	< 5.0	< 5.0	< 5.0
Tetrachloroethylene (PCE)			795	796 G	1020	1010	860	933	323	166
Tetrahydrofuran			< 20	< 10	< 20 F+	< 20	< 50	< 10	< 10	< 10
Toluene			< 2.0	< 1.0	< 2.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)			12.8	16.6	8.5	14.3 J+	8.2	10.2	4.2	3.8
1,1,2-Trichloroethane			< 2.0	< 1.0	< 2.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0
Trichloroethylene (TCE)			229	341	196	267	195	212	88.7	57.7
1,2,4-Trimethylbenzene			< 10	< 5.0 J+	< 10 J+	< 10	< 25	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene			< 10	< 5.0 J+	< 10 F-	< 10	< 25	< 5.0	< 5.0	< 5.0
Vinyl chloride			13.9	6.3	6.1	6.9	5.7	6.1	13.5	9.0
m,p-Xylene			< 2.0	< 1.0	< 2.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0
o-Xylene			< 2.0	< 1.0	< 2.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0
Total Xylene			< 2.0	< 1.0	< 2.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0
Metals	6010B	µg/l	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic										
Iron										
Manganese										
Others			NT	NT	NT	NT	NT	NT	NT	NT
Methane	8015	µg/l								
Ethane	8015	µg/l								
Ethylene	8015	µg/l								
Alkalinity	E310.1	µg/l								
Chloride	E325.3	µg/l								
Chlorine, Total Residual	E330.4	µg/l								
Nitrate & Nitrite as N	E353.2	µg/l								
Nitrogen, Nitrate	E353.2	µg/l								
Nitrogen, Nitrite	E354.1	µg/l								
Sulfate	E375.4	µg/l								
Sulfide	E376.1	µg/l								
Surfactants	E425.1	µg/l								
Total Organic Carbon	E415.1	µg/l								

Sample Location:	MW117D											
Sample Name:	MW117D	MW117D	MW117D	MW117D	MW117D	MW117D	MW117D	MW117D	MW117D	MW117D	MW117D	MW117D
Well Screen Interval (ft bgs):	60 to 70	60 to 70	60 to 70	60 to 70	60 to 70	60 to 70	60 to 70	60 to 70	60 to 70	60 to 70	60 to 70	60 to 70
Sample Date:	7/19/07	10/11/07	1/15/08	4/16/08	7/16/08	10/21/08	1/13/09	4/14/09	7/15/09	10/14/09	4/13/10	4/20/11
Collected By:	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte												
Volatile Organic Compounds (VOCs)												
Acetone	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromobenzene	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromodichloromethane	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Butylbenzene	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon disulfide	NT	< 5.0	< 5.0	6.5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon tetrachloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chloroform	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	NT	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,3-Dichlorobenzene	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane	NT	< 2.0	< 2.0	< 2.0 J+	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1-Dichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,4-Dioxane	NT	< 25	< 25	< 25	< 25	< 25	< 25 J+	< 25 J+	< 25	< 25	< 25	< 25
Ethylbenzene	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Hexanone	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropyl benzene	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-Isopropyltoluene	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl tert-butyl ether	NT	1.6	2.3	1.5	< 1.0	1.5	0.96 J	0.86 J	1.3	1.5	1.2	< 1.0
Methylene chloride	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Naphthalene	NT	< 5.0	4.9 J	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0
n-Propylbenzene	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tert-amyl methyl ether	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethylene (PCE)	0.54 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrahydrofuran	NT	< 10	< 10	< 10	< 10	< 10	< 10	< 10 J+	< 10	< 10	< 10	< 10
Toluene	NT	0.98 J	< 1.0	0.34 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene (TCE)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl chloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Xylene	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Metals	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic												
Iron												
Manganese												
Others	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Methane												
Ethane												
Ethylene												
Alkalinity												
Chloride												
Chlorine, Total Residual												
Nitrate & Nitrite as N												
Nitrogen, Nitrate												
Nitrogen, Nitrite												
Sulfate												
Sulfide												
Surfactants												
Total Organic Carbon												

Sample Location:	MW117S											
Sample Name:	MW117S	MW117S	MW117S	MW117S	MW117S	MW117S	MW117S	MW117S	MW117S	MW117S	MW117S	MW117S
Well Screen Interval (ft bgs):	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20
Sample Date:	7/18/07	10/15/07	1/11/08	4/16/08	7/16/08	10/21/08	1/13/09	4/14/09	7/15/09	10/14/09	4/13/10	4/21/11
Collected By:	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte												
Volatile Organic Compounds (VOCs)												
Acetone	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromobenzene	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromodichloromethane	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Butylbenzene	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon disulfide	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon tetrachloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chloroform	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	NT	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,3-Dichlorobenzene	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane	NT	< 2.0	< 2.0	< 2.0 J+	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1-Dichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,4-Dioxane	NT	< 25	< 25	< 25	< 25	< 25	< 25 J+	< 25 J+	< 25	< 25	< 25	< 25
Ethylbenzene	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Hexanone	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropyl benzene	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-Isopropyltoluene	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl tert-butyl ether	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene chloride	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Naphthalene	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0
n-Propylbenzene	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tert-amyl methyl ether	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethylene (PCE)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrahydrofuran	NT	< 10	< 10	< 10	< 10	< 10	< 10	< 10 J+	< 10	< 10	< 10	< 10
Toluene	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene (TCE)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl chloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Xylene	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Metals	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic												
Iron												
Manganese												
Others	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Methane												
Ethane												
Ethylene												
Alkalinity												
Chloride												
Chlorine, Total Residual												
Nitrate & Nitrite as N												
Nitrogen, Nitrate												
Nitrogen, Nitrite												
Sulfate												
Sulfide												
Surfactants												
Total Organic Carbon												

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes refer to the laboratory data reports.
2. ft bgs = feet below ground surface.
3. µg/l = micrograms per liter.
4. "<" = The analyte was not detected at a concentration above the specified reporting limit.
5. SHA = Sanborn Head & Associates.
6. Results in bold exceed the current applicable Method 1 GW2 standard.
7. FD = Field Duplicate Sample.
8. NT = Not Tested.

Qualifying Notes:

A The result is estimated due to exceedence of holding time criteria.
B The analyte found in associated method blank.
C+ The result has a high bias due to surrogate recovery above upper control limits.
E The value exceeds the calibration range.
F+ The result has a high bias due to matrix spike recovery above upper control limits.
F- The result has a low bias due to matrix spike recovery below lower control limits.
G The result is estimated due to duplicate precision outside control limits.
J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.
R The result is rejected due to gross exceedence of minimum response factor criteria.

Table 3-2
Chemical Testing Results - Groundwater
50 Tufts Street
Somerville, Massachusetts

		Sample Location:	MW117T												MW118D														MW118S					
		Sample Name:	MW117T	MW117T	MW117T	MW117T	MW117T	MW117T	MW117T	MW117T	MW117T	MW117T	MW117T	MW117T	MW118D	MW118D	MW118D	MW118D	MW118D	MW118D	MW118D	MW118D	MW118D	MW118D	MW118D	MW901 (FD)	MW118D	MW118D	MW118S	MW118S	MW118S	MW118S	MW118S	MW118S
		Well Screen Interval (ft bgs):	35 to 45	35 to 45	35 to 45	35 to 45	35 to 45	35 to 45	35 to 45	35 to 45	35 to 45	35 to 45	35 to 45	35 to 45	70 to 80	70 to 80	70 to 80	70 to 80	70 to 80	70 to 80	70 to 80	70 to 80	70 to 80	70 to 80	70 to 80	4 to 19	4 to 19	4 to 19	3 to 14	3 to 14	3 to 14	3 to 14	3 to 14	3 to 14
		Sample Date:	7/19/07	10/11/07	1/15/08	4/16/08	7/16/08	10/21/08	1/13/09	4/14/09	7/15/09	10/16/09	4/13/10	4/21/11	7/20/07	8/30/07	10/11/07	1/16/08	4/16/08	7/16/08	10/21/08	1/14/09	4/14/09	7/15/09	10/14/09	10/14/09	4/12/10	4/20/11	7/20/07	8/30/07	10/11/07	1/11/08	4/16/08	7/15/08
		Collected By:	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte	**Method**	**Units**																																
Volatile Organic Compounds (VOCs)																																		
Acetone	8260	µg/l	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0
Benzene			NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT	NT	< 0.50	0.24 J	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NT	NT	< 0.50	< 0.50	< 0.50	< 0.50
Bromobenzene			NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0
Bromodichloromethane			NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform			NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)			NT	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0
n-Butylbenzene			NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0
Carbon disulfide			NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	1.6 J	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0 J+
Carbon tetrachloride			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene			NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chloroform			NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane			NT	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	NT	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	NT	< 2.0	< 2.0	< 2.0 J+	< 2.0
1,3-Dichlorobenzene			NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane			NT	< 2.0	< 2.0	< 2.0 J+	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	NT	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	NT	< 2.0	< 2.0	< 2.0 J+	< 2.0 J+
1,1-Dichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	20.3	21.4	31.2	31.7	33.3	34.3	22.8	26.0	22.8	28.7	41.2	39.5	40.0	43.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.55 J	< 1.0	< 1.0	< 1.0	< 1.0	0.96 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane			NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	NT	< 2.0	< 2.0	< 2.0	< 2.0
1,4-Dioxane			NT	< 25	< 25	< 25	< 25	< 25	< 25 J+	< 25	< 25	< 25	< 25	< 25	NT	NT	< 25	< 25	< 25	< 25	< 25	< 25	< 25 J+	< 25	< 25	< 25	< 25	< 25	NT	NT	< 25	< 25	< 25	< 25
Ethylbenzene			NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0
2-Hexanone			NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0
Isopropyl benzene			NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0
4-Isopropyltoluene			NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	0.93 J	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0
Methyl tert-butyl ether			NT	3.4	9.8	4.8	1.7	2.8	1.9	4.1	1.5	7.0	1.6	1.4	NT	NT	< 1.0	0.40 J	< 1.0	0.40 J	< 1.0	< 1.0	0.38 J	0.39 J	0.55 J	0.51 J	< 1.0	0.83 J	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0
Methylene chloride			NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	NT	< 2.0	< 2.0	< 2.0	< 2.0
Naphthalene			NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0
n-Propylbenzene			NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0
Tert-amyl methyl ether			NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NT	NT	< 2.0	< 2.0	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane			NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethylene (PCE)			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	7.0	8.4	8.2	6.1	5.7	7.1	2.1	1.2	< 1.0	2.3	0.93 J	1.1	1.5	4.6	0.39 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrahydrofuran			NT	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	NT	NT	< 10	< 10	< 10	< 10	< 10	< 10	< 10 J+	< 10	< 10	< 10	< 10	< 10	NT	NT	< 10	< 10	< 10	< 10
Toluene			NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	NT	< 1.0	0.62 J	< 1.0	0.27 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene (TCE)			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.2	3.9	1.8	0.94 J	1.0	1.9	< 1.0	1.9	1.5	3.0	6.1	6.3	10.0	11.9	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene			NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene			NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl chloride			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene			NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene			NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0
Total Xylene			NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	NT	< 1.0	< 1.0	< 1.0	< 1.0
Metals	6010B	µg/l	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic																																		
Iron																																		
Manganese																																		
Others			NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Methane	8015	µg/l																																
Ethane	8015	µg/l																																
Ethylene	8015	µg/l																																
Alkalinity	E310.1	µg/l																																
Chloride	E325.3	µg/l																																
Chlorine, Total Residual	E330.4	µg/l																																
Nitrate & Nitrite as N	E353.2	µg/l																																
Nitrogen, Nitrate	E353.2	µg/l																																
Nitrogen, Nitrite	E354.1	µg/l																																
Sulfate	E375.4	µg/l																																
Sulfide	E376.1	µg/l																																
Surfactants	E425.1	µg/l																																
Total Organic Carbon	E415.1	µg/l																																

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes refer to the laboratory data reports.
2. ft bgs = feet below ground surface.
3. µg/l = micrograms per liter.
4. "<" = The analyte was not detected at a concentration above the specified reporting limit.
5. SHA = Sanborn Head & Associates.
6. Results in bold exceed the current applicable Method 1 GW2 standard.
7. FD = Field Duplicate Sample.
8. NT = Not Tested.

Qualifying Notes:

A The result is estimated due to exceedence of holding time criteria.
B The analyte found in associated method blank.
C+ The result has a high bias due to surrogate recovery above upper control limits.
E The value exceeds the calibration range.
F+ The result has a high bias due to matrix spike recovery above upper control limits.
F- The result has a low bias due to matrix spike recovery below lower control limits.
G The result is estimated due to duplicate precision outside control limits.
J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.
R The result is rejected due to gross exceedence of minimum response factor criteria.

Table 3-2
Chemical Testing Results - Groundwater
50 Tufts Street
Somerville, Massachusetts

Sample Location:			MW118S (continued)						
Sample Name:			MW118S	MW118S	MW118S	MW118S	MW118S	MW118S	MW118S
Well Screen Interval (ft bgs):			3 to 14	3 to 14	3 to 14	3 to 14	3 to 14	3 to 14	3 to 14
Sample Date:			10/21/08	1/14/09	4/15/09	7/15/09	10/14/09	4/12/10	4/20/11
Collected By:			GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte	Method	Units							
Volatile Organic Compounds (VOCs)									
Acetone	8260	µg/l	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0 J+	< 5.0
Benzene			< 0.50	< 0.50	< 0.50 J+	< 0.50	< 0.50	< 0.50	< 0.50
Bromobenzene			< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0
Bromodichloromethane			< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)			< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0
n-Butylbenzene			< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0
Carbon disulfide			< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0
Carbon tetrachloride			< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane			< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0
Chloroform			< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane			< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0
1,3-Dichlorobenzene			< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane			< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0
1,1-Dichloroethane			< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane			< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethylene			< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethylene			< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethylene			< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane			< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0
1,4-Dioxane			< 25	< 25	< 25 J+	< 25	< 25	< 25	< 25
Ethylbenzene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Hexanone			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropyl benzene			< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0
4-Isopropyltoluene			< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	21.9
Methyl tert-butyl ether			< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0
Methylene chloride			< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0
Naphthalene			< 5.0	< 5.0	< 5.0 J+	< 5.0 J+	< 5.0	< 5.0	< 5.0
n-Propylbenzene			< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0
Tert-amyl methyl ether			< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethylene (PCE)			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrahydrofuran			< 10	< 10	< 10 J+	< 10	< 10	< 10	< 10
Toluene			< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)			< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane			< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene (TCE)			< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene			< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene			< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl chloride			< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Xylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Metals	6010B	µg/l	NT	NT	NT	NT	NT	NT	NT
Arsenic									
Iron									
Manganese									
Others			NT	NT	NT	NT	NT	NT	NT
Methane	8015	µg/l							
Ethane	8015	µg/l							
Ethylene	8015	µg/l							
Alkalinity	E310.1	µg/l							
Chloride	E325.3	µg/l							
Chlorine, Total Residual	E330.4	µg/l							
Nitrate & Nitrite as N	E353.2	µg/l							
Nitrogen, Nitrate	E353.2	µg/l							
Nitrogen, Nitrite	E354.1	µg/l							
Sulfate	E375.4	µg/l							
Sulfide	E376.1	µg/l							
Surfactants	E425.1	µg/l							
Total Organic Carbon	E415.1	µg/l							

Sample Location:			MW118T												
Sample Name:			MW118T	MW118T	MW118T	MW118T	MW118T	MW118T	MW118T	MW118T	MW118T	MW118T	MW118T	MW118T	MW118T
Well Screen Interval (ft bgs):			39.5 to 49.5	39.5 to 49.5	39.5 to 49.5	39.5 to 49.5	39.5 to 49.5	39.5 to 49.5	39.5 to 49.5	39.5 to 49.5	39.5 to 49.5	39.5 to 49.5	39.5 to 49.5	39.5 to 49.5	39.5 to 49.5
Sample Date:			7/20/07	8/30/07	10/11/07	1/15/08	4/16/08	7/15/08	10/21/08	1/14/09	4/14/09	7/14/09	10/15/09	4/12/10	4/20/11
Collected By:			GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte	Method	Units													
Volatile Organic Compounds (VOCs)															
Acetone	8260	µg/l	NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0
Benzene			NT	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromobenzene			NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromodichloromethane			NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform			NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)			NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Butylbenzene			NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon disulfide			NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon tetrachloride			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene			NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chloroform			NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane			NT	NT	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,3-Dichlorobenzene			NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane			NT	NT	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1-Dichloroethane			35.4	34.4	44.2	42.3	42.0	41.9	37.0	33.4	33.6	40.0	53.3 J+	37.8	35.9
1,2-Dichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethylene			0.45 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane			NT	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,4-Dioxane			NT	NT	< 25	< 25	< 25 J+	< 25	< 25	< 25	< 25 J+	< 25	< 25	< 25	< 25
Ethylbenzene			NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Hexanone			NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropyl benzene			NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-Isopropyltoluene			NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl tert-butyl ether			NT	NT	2.4	3.1	2.2	2.5	2.2	2.3	2.0	1.9	7.5	1.2	2.4
Methylene chloride			NT	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Naphthalene			NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Propylbenzene			NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tert-amyl methyl ether			NT	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane			NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethylene (PCE)			3.0	3.8	2.2	2.9	2.7	2.5	2.4	2.1	2.0	1.7	2.8	1.6	2.1
Tetrahydrofuran			NT	NT	< 10	< 10	< 10 J+	< 10	< 10	< 10	< 10 J+	< 10	< 10	< 10	< 10
Toluene			NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene (TCE)			< 1.0	< 1.0	< 1.0	0.31 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.50 J	0.80 J	< 1.0	< 1.0
1,2,4-Trimethylbenzene			NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene			NT	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl chloride			< 1.0	2.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene			NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene			NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Xylene			NT	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Metals	6010B	µg/l	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic															
Iron															
Manganese															
Others			NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Methane	8015	µg/l													
Ethane	8015	µg/l													
Ethylene	8015	µg/l													
Alkalinity	E310.1	µg/l													
Chloride	E325.3	µg/l													
Chlorine, Total Residual	E330.4	µg/l													
Nitrate & Nitrite as N	E353.2	µg/l													
Nitrogen, Nitrate	E353.2	µg/l													
Nitrogen, Nitrite	E354.1	µg/l													
Sulfate	E375.4	µg/l													
Sulfide	E376.1	µg/l													
Surfactants	E425.1	µg/l													
Total Organic Carbon	E415.1	µg/l													

Sample Location:			MW119S											
Sample Name:			MW119S	MW119S	MW119S	MW119S	MW119S	MW119S	MW119S	MW119S	MW119S	MW119S	MW119S	MW119S
Well Screen Interval (ft bgs):			5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20
Sample Date:			8/22/07	10/12/07	1/15/08	4/16/08	7/15/08	10/22/08	1/13/09	4/13/09	7/15/09	10/15/09	4/13/10	4/22/11
Collected By:			GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte	Method	Units												
Volatile Organic Compounds (VOCs)														
Acetone	8260	µg/l	< 5.0 J+	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene			< 0.50 J+	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromobenzene			< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromodichloromethane			< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform			< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)			< 5.0 J+	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Butylbenzene			< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon disulfide			< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon tetrachloride			< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene			< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane			< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chloroform			< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane			< 2.0 J+	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,3-Dichlorobenzene			< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane			< 2.0 J+	< 2.0 J+	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1-Dichloroethane			< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane			< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethylene			< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethylene			< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethylene			< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane			< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,4-Dioxane			< 25 J+	< 25	< 25	< 25	< 25	< 25	< 25 J+	< 25	< 25	< 25	< 25	< 25
Ethylbenzene			< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Hexanone			< 5.0 J+	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropyl benzene			< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-Isopropyltoluene			< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl tert-butyl ether			5.2 J+	2.0	2.1	0.83 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene chloride			< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Naphthalene			< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0
n-Propylbenzene			< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tert-amyl methyl ether			< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane			< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethylene (PCE)			< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.5
Tetrahydrofuran			< 10 J+	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Toluene			< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)			< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane			< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene (TCE)			< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene			< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene			< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl chloride			< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene			< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene			< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Xylene			< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Metals	6010B	µg/l	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic														
Iron														
Manganese														
Others			NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Methane	8015	µg/l												
Ethane	8015	µg/l												
Ethylene	8015	µg/l												
Alkalinity	E310.1	µg/l												
Chloride	E325.3	µg/l												
Chlorine, Total Residual	E330.4	µg/l												
Nitrate & Nitrite as N	E353.2	µg/l												
Nitrogen, Nitrate	E353.2	µg/l												
Nitrogen, Nitrite	E354.1	µg/l												
Sulfate	E375.4	µg/l												
Sulfide	E376.1	µg/l												
Surfactants	E425.1	µg/l												
Total Organic Carbon	E415.1	µg/l												

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes refer to the laboratory data reports.
2. ft bgs = feet below ground surface.
3. µg/l = micrograms per liter.
4. "<" = The analyte was not detected at a concentration above the specified reporting limit.
5. SHA = Sanborn Head & Associates.
6. Results in bold exceed the current applicable Method 1 GW2 standard.
7. FD = Field Duplicate Sample.
8. NT = Not Tested.

Qualifying Notes:

A The result is estimated due to exceedence of holding time criteria.
B The analyte found in associated method blank.
C+ The result has a high bias due to surrogate recovery above upper control limits.
E The value exceeds the calibration range.
F+ The result has a high bias due to matrix spike recovery above upper control limits.
F- The result has a low bias due to matrix spike recovery below lower control limits.
G The result is estimated due to duplicate precision outside control limits.
J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.
R The result is rejected due to gross exceedence of minimum response factor criteria.

Table 3-2
Chemical Testing Results - Groundwater
50 Tufts Street
Somerville, Massachusetts

		Sample Location:	MW119T												MW120D												MW120S											
		Sample Name:	MW119T	MW119T	MW119T	MW119T	MW119T	MW119T	MW119T	MW119T	MW119T	MW119T	MW119T	MW119T	MW120D	MW120D	MW120D	MW1120D	MW120D	MW120D	MW120D	MW120D	MW120D	MW120D	MW120D	MW120D	MW120S	MW120S	MW120S	MW1120S	MW120S	MW120S	MW120S	MW120S	MW120S	MW120S	MW120S	MW120S
		Well Screen Interval (ft bgs):	42 to 47	42 to 47	42 to 47	42 to 47	42 to 47	42 to 47	42 to 47	42 to 47	42 to 47	42 to 47	42 to 47	42 to 47	28 to 38	28 to 38	28 to 38	28 to 38	28 to 38	28 to 38	28 to 38	28 to 38	28 to 38	28 to 38	28 to 38	28 to 38	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20
		Sample Date:	8/22/07	10/12/07	1/16/08	4/16/08	7/15/08	10/22/08	1/13/09	4/13/09	7/15/09	10/15/09	4/13/10	4/22/11	8/22/07	10/12/07	1/17/08	4/16/08	7/15/08	10/22/08	1/13/09	4/14/09	7/15/09	10/15/09	4/13/10	4/22/11	8/22/07	10/12/07	1/15/08	4/16/08	7/15/08	10/22/08	1/13/09	4/14/09	7/15/09	10/15/09	4/13/10	4/22/11
		Collected By:	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte	Method	Units																																				
Volatile Organic Compounds (VOCs)																																						
Acetone	8260	µg/l	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromobenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromodichloromethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)			< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Butylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon disulfide			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	0.56 J J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon tetrachloride			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chloroform			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.9 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane			9.2 J+	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	1.4 J	< 2.0	< 2.0	12.0 J+	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	10.3 J+	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,3-Dichlorobenzene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane			< 2.0	< 2.0 J+	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1-Dichloroethane			10.4 J+	11.0	10.9	10.4	11.0	5.3	9.0	9.1	7.7	10.8 J+	10.2	9.4	23.0 J+	26.0	23.2	30.8	29.5	21.8	21.4	20.9	18.4	31.1 J+	25.1	23.1	1.1 J+	4.3	< 1.0	< 1.0	2.5	< 1.0	< 1.0	< 1.0	0.36 J	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethylene			2.0 J+	6.4	6.0	6.2	5.8	< 1.0	5.1	5.0	4.6	6.1 J+	5.4	7.0	15.6 J+	18.9	14.3	17.8	22.0	18.4	16.7	16.9	14.1	24.7 J+	19.4	23.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethylene			0.54 J J+	1.2	1.1	1.2	1.1	< 1.0	0.20 J	1.0	0.66 J	0.94 J J+	< 1.0	< 1.0	0.70 J J+	< 1.0	1.7	1.9	1.9	1.6	0.70 J	1.6	1.5	1.8 J+	1.7	2.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,4-Dioxane			< 25	< 25	< 25	< 25	< 25	< 25	< 25 J+	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25 J+	< 25	< 25	< 25	< 25 J+	< 25 J+	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25 J+	< 25 J+	< 25	< 25	< 25	< 25
Ethylbenzene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Hexanone			< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropyl benzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-Isopropyltoluene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl tert-butyl ether			4.1 J+	0.66 J	0.64 J	0.50 J	< 1.0	< 1.0	0.47 J	0.37 J	0.34 J	< 1.0	< 1.0	< 1.0	6.8 J+	3.9	3.2	4.2	3.8	6.6	2.8	2.4	2.0	7.5	2.2	2.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene chloride			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Naphthalene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	0.68 J	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0
n-Propylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tert-amyl methyl ether			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethylene (PCE)			94.3 J+	105	85.0	86.3	81.2	17.5	78.8	72.2	85.8	72.5	85.4	74.6	93.5 J+	120	113	131	103	118	84.2	114	99.3	95.0	95.9	75.0	< 1.0	< 1.0	0.97 J	< 1.0	< 1.0	0.71 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrahydrofuran			< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10 J+	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10 J+	< 10	< 10	< 10	< 10
Toluene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)			< 1.0	0.69 J	0.52 J	2.6	< 1.0	< 1.0	0.46 J	< 1.0	0.54 J	< 1.0	< 1.0	< 1.0	10.3 J+	4.3	3.2	< 1.0	3.9	6.4	2.8	3.7	2.5	3.3	3.5	4.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene (TCE)			25.9 J+	29.6	26.7	26.8	26.7	6.7	24.9	23.7	26.4	23.0	27.1	23.2	32.6 J+	40.1	34.7	43.4	38.7	33.2	30.4	33.8	32.0	33.1	34.8	28.3	< 1.0	< 1.0	0.39 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene			< 5.0	< 5.0	< 5.0	0.56 J	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl chloride			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.38 J	0.35 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.43 J	< 1.0	< 1.0	1.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Xylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Metals	6010B	µg/l	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic																																						
Iron																																						
Manganese																																						
Others			NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Methane	8015	µg/l																																				
Ethane	8015	µg/l																																				
Ethylene	8015	µg/l																																				
Alkalinity	E310.1	µg/l																																				
Chloride	E325.3	µg/l																																				
Chlorine, Total Residual	E330.4	µg/l																																				
Nitrate & Nitrite as N	E353.2	µg/l																																				
Nitrogen, Nitrate	E353.2	µg/l																																				
Nitrogen, Nitrite	E354.1	µg/l																																				
Sulfate	E375.4	µg/l																																				
Sulfide	E376.1	µg/l																																				
Surfactants	E425.1	µg/l																																				
Total Organic Carbon	E415.1	µg/l																																				

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes refer to the laboratory data reports.
2. ft bgs = feet below ground surface.
3. µg/l = micrograms per liter.
4. "<" = The analyte was not detected at a concentration above the specified reporting limit.
5. SHA = Sanborn Head & Associates.
6. Results in bold exceed the current applicable Method 1 GW2 standard.
7. FD = Field Duplicate Sample.
8. NT = Not Tested.

Qualifying Notes:

A	The result is estimated due to exceedence of holding time criteria.
B	The analyte found in associated method blank.
C+	The result has a high bias due to surrogate recovery above upper control limits.
E	The value exceeds the calibration range.
F+	The result has a high bias due to matrix spike recovery above upper control limits.
F-	The result has a low bias due to matrix spike recovery below lower control limits.
G	The result is estimated due to duplicate precision outside control limits.
J	The reported result is below the laboratory reporting limit and is estimated.
J+	The reported result is estimated.
R	The result is rejected due to gross exceedence of minimum response factor criteria.

Table 3-2
Chemical Testing Results - Groundwater
50 Tufts Street
Somerville, Massachusetts

Sample Location:			MW121D																MW121S										
Sample Name:			MW121D	MW121D	MW121D	MW121D	MW901	MW121D	MW900 (FD)	MW121D	MW901 (FD)	MW121D	MW900 (FD)	MW121D	MW900 (FD)	MW121D	MW121D	MW121D	MW121S	MW121S	MW121S	MW121S	MW121S	MW121S	MW121S	MW121S	MW121S	MW121S	MW121S
Well Screen Interval (ft bgs):			32.1 to 47.1	32.1 to 47.1	32.1 to 47.1	32.1 to 47.1	32.1 to 47.1	32.1 to 47.1	32.1 to 47.1	32.1 to 47.1	32.1 to 47.1	32.1 to 47.1	32.1 to 47.1	32.1 to 47.1	32.1 to 47.1	32.1 to 47.1	32.1 to 47.1	32.1 to 47.1	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20	5 to 20
Sample Date:			10/22/07	1/15/08	4/17/08	7/14/08	7/14/08	10/22/08	10/22/08	1/12/09	1/12/09	4/13/09	4/13/09	7/14/09	7/14/09	10/14/09	4/12/10	4/20/11	10/22/07	1/15/08	4/17/08	7/14/08	10/22/08	1/12/09	4/13/09	7/14/09	10/14/09	4/12/10	4/20/11
Collected By:			GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte	Method	Units																											
Volatile Organic Compounds (VOCs)																													
Acetone	8260	µg/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 F+	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 F+	< 5.0	< 5.0 J+	< 5.0
Benzene			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromobenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromodichloromethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Butylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon disulfide			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon tetrachloride			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chloroform			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0 J+	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,3-Dichlorobenzene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.32 J	0.33 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.43 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1-Dichloroethane			46.3	55.3	46.6	37.2	38.1	36.1	34.2	38.2	38.3	37.2	38.1	37.6	37.9	54.8	52.9	65.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethylene			13.2	< 1.0	16.7	12.8	12.6	12.9 G	8.4 G	14.0	14.2	14.1	14.2	11.0	10.4	21.8	18.0	24.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethylene			3.9	11.8	6.4	21.8	22.6	83.7 G	41.2 G	134	138	80.0	78.4	105	106	253	279	217	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethylene			< 1.0	0.70 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	5.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,4-Dioxane			< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25
Ethylbenzene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Hexanone			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropyl benzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-Isopropyltoluene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl tert-butyl ether			3.0	3.8	2.4	2.1	2.0	5.6	5.6	1.8	1.8	1.7	1.9	1.4	1.4	< 1.0	0.94 J	2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene chloride			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Naphthalene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Propylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	5.2	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tert-amyl methyl ether			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethylene (PCE)			182	258	177	157	154	148 G	97.7 G	112	114	121	118	140	139	115	119	219	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrahydrofuran			< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10 F+	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10 F+	< 10	< 10	< 10
Toluene			0.51 J	1.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)			1.2	1.3	1.2	1.1	1.0	4.9	4.6	0.87 J	0.86 J	1.0	< 1.0	0.95 J	1.0	< 1.0	0.62 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene (TCE)			59.6	136	68.8	71.0	72.0	48.3 G	69.0 G	36.5	36.3	62.3	70.7	76.3	76.5	146.0	96.3	233.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 F-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 F-	< 5.0	< 5.0	< 5.0
Vinyl chloride			0.39 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.32 J	0.31 J	< 1.0	< 1.0	0.56 J	0.52 J	< 1.0	< 1.0	7.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Xylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Metals	6010B	µg/l	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic																													
Iron																													
Manganese																													
Others			NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Methane	8015	µg/l																											
Ethane	8015	µg/l																											
Ethylene	8015	µg/l																											
Alkalinity	E310.1	µg/l																											
Chloride	E325.3	µg/l																											
Chlorine, Total Residual	E330.4	µg/l																											
Nitrate & Nitrite as N	E353.2	µg/l																											
Nitrogen, Nitrate	E353.2	µg/l																											
Nitrogen, Nitrite	E354.1	µg/l																											
Sulfate	E375.4	µg/l																											
Sulfide	E376.1	µg/l																											
Surfactants	E425.1	µg/l																											
Total Organic Carbon	E415.1	µg/l																											

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes refer to the laboratory data reports.
2. ft bgs = feet below ground surface.
3. µg/l = micrograms per liter.
4. "<" = The analyte was not detected at a concentration above the specified reporting limit.
5. SHA = Sanborn Head & Associates.
6. Results in bold exceed the current applicable Method 1 GW2 standard.
7. FD = Field Duplicate Sample.
8. NT = Not Tested.

Qualifying Notes:

A The result is estimated due to exceedence of holding time criteria.
B The analyte found in associated method blank.
C+ The result has a high bias due to surrogate recovery above upper control limits.
E The value exceeds the calibration range.
F+ The result has a high bias due to matrix spike recovery above upper control limits.
F- The result has a low bias due to matrix spike recovery below lower control limits.
G The result is estimated due to duplicate precision outside control limits.
J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.
R The result is rejected due to gross exceedence of minimum response factor criteria.

Table 3-2
Chemical Testing Results - Groundwater
50 Tufts Street
Somerville, Massachusetts

		Sample Location:	MW122										
		Sample Name:	MW122	MW122	MW122	MW122	MW122	MW122	MW122	MW122	MW122	MW122	MW122
		Well Screen Interval (ft bgs):	4 to 16	4 to 16	4 to 16	4 to 16	4 to 16	4 to 16	4 to 16	4 to 16	4 to 16	4 to 16	4 to 16
		Sample Date:	1/30/08	4/17/08	7/14/08	10/22/08	1/12/09	4/13/09	7/15/09	10/14/09	4/12/10	10/27/10	4/20/11
		Collected By:	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte	Method	Units											
Volatile Organic Compounds (VOCs)													
Acetone	8260	µg/l	< 5.0 J+	9.6 J	11.1	7.2	5.7	< 5.0	< 5.0 F-	< 10	3.8 J+	< 5.0	17.8
Benzene			< 0.50	< 1.0	0.46 J	< 0.50	< 0.50	< 0.50	0.23 J	< 1.0	< 0.50	< 0.50	< 1.0
Bromobenzene			< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 10
Bromodichloromethane			< 1.0	1.1 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
Bromoform			< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
2-Butanone (MEK)			< 5.0 J+	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 10
n-Butylbenzene			< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 10
Carbon disulfide			< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 F-	< 10	< 5.0	< 5.0	< 10
Carbon tetrachloride			< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
Chlorobenzene			< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
Chloroethane			< 2.0	< 4.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0 F-	< 4.0	< 2.0	< 2.0	< 4.0
Chloroform			< 1.0	< 2.0	< 1.0	0.61 J	< 1.0	< 1.0	< 1.0	0.75 J	< 1.0	< 1.0	< 2.0
Chloromethane			< 2.0	< 4.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0 F-	< 4.0	< 2.0	< 2.0	< 4.0
1,3-Dichlorobenzene			< 1.0	< 2.0	< 1.0	< 1.0	0.60 J	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
Dichlorodifluoromethane			< 2.0	< 4.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0 F-	< 4.0	< 2.0	< 2.0	< 4.0
1,1-Dichloroethane			19.3	30.4 C+	10.1	15.0	16.0	25.8	21.2	20.8	29.6	20.3	19.1
1,2-Dichloroethane			< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
1,1-Dichloroethylene			4.0	9.0 C+	1.4	4.4	3.4	6.1	5.3 F-	6.6	7.3	4.6	8.3
cis-1,2-Dichloroethylene			60.6	70.7 C+	34.0	62.5	91.5	61.9	39.4	109.0	58.6	117	45.5
trans-1,2-Dichloroethylene			0.87 J	< 2.0	< 1.0	< 1.0	< 1.0	0.93 J	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
1,2-Dichloropropane			< 2.0	< 4.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0	< 2.0	< 4.0
1,4-Dioxane			< 25	< 50	< 25	< 25	< 25	< 25	< 25	< 50	< 25	< 25	< 50
Ethylbenzene			< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
2-Hexanone			< 5.0 J+	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 10
Isopropyl benzene			< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 10
4-Isopropyltoluene			< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 10
Methyl tert-butyl ether			3.3	3.9 C+	1.9	5.6	2.5	3.2	3.3	2.9	2.3	2.7	2.9
Methylene chloride			< 2.0	< 4.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0	< 2.0	< 4.0
Naphthalene			< 5.0	< 10	2.6 J	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 10
n-Propylbenzene			< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 10
Tert-amyl methyl ether			< 2.0	< 4.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0	< 2.0	< 4.0
1,1,1,2-Tetrachloroethane			< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 10
Tetrachloroethylene (PCE)			477	691 C+	122	352 G	312	499 G	677	518	856	532	656
Tetrahydrofuran			< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 20
Toluene			0.48 J	< 2.0	2.8	3.7	0.64 J	2.4	1.6	< 4.0	6.0	< 1.0	< 2.0
1,1,1-Trichloroethane (TCA)			1.4	3.4 C+	0.63 J	5.1	1.1	1.7	1.7	< 2.0	1.5	< 1.0	7.5
1,1,2-Trichloroethane			< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
Trichloroethylene (TCE)			177	106 C+	27.0	56.9	59.6	91.7	90.2	81.1	119.0	82.1	73.1
1,2,4-Trimethylbenzene			< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 10
1,3,5-Trimethylbenzene			< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 10
Vinyl chloride			0.32 J	< 2.0	< 1.0	< 1.0	1.2	< 1.0	< 1.0 F-	4.3	< 1.0	3.6	< 2.0
m,p-Xylene			< 1.0	< 2.0	0.92 J	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
o-Xylene			< 1.0	< 2.0	0.67 J	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
Total Xylene			< 1.0	< 2.0	1.6 J	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
Metals	6010B	µg/l	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic													
Iron													
Manganese													
Others			NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Methane	8015	µg/l											
Ethane	8015	µg/l											
Ethylene	8015	µg/l											
Alkalinity	E310.1	µg/l											
Chloride	E325.3	µg/l											
Chlorine, Total Residual	E330.4	µg/l											
Nitrate & Nitrite as N	E353.2	µg/l											
Nitrogen, Nitrate	E353.2	µg/l											
Nitrogen, Nitrite	E354.1	µg/l											
Sulfate	E375.4	µg/l											
Sulfide	E376.1	µg/l											
Surfactants	E425.1	µg/l											
Total Organic Carbon	E415.1	µg/l											

Sample Location:	MW201				MW202											
Sample Name:	MW201	MW201	MW201	MW201	MW202	MW202	MW202	MW202	MW202	MW202	MW202	MW202	MW202	MW202	MW202	MW202
Well Screen Interval (ft bgs):	11 to 21	11 to 21	11 to 21	11 to 21	10.5 to 20.5	10.5 to 20.5	10.5 to 20.5	10.5 to 20.5	10.5 to 20.5	10.5 to 20.5	10.5 to 20.5	10.5 to 20.5	10.5 to 20.5	10.5 to 20.5	10.5 to 20.5	10.5 to 20.5
Sample Date:	7/19/07	10/12/07	1/11/08	4/15/08	7/19/07	10/12/07	1/11/08	4/15/08	7/15/08	10/21/08	1/13/09	4/15/09	7/14/09	10/14/09	4/12/10	4/22/11
Collected By:	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte																
Volatile Organic Compounds (VOCs)																
Acetone	NT	< 5.0 J+	< 5.0	< 5.0	NT	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0
Benzene	NT	< 0.50	< 0.50	< 0.50	NT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 J+	< 0.50	< 0.50	< 0.50	< 0.50
Bromobenzene	NT	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0
Bromodichloromethane	NT	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	NT	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)	NT	< 5.0 J+	< 5.0	< 5.0	NT	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
n-Butylbenzene	NT	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0
Carbon disulfide	NT	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbon tetrachloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	NT	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chloroform	NT	0.47 J	0.40 J	0.24 J	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.89 J	< 1.0
Chloromethane	NT	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,3-Dichlorobenzene	NT	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane	NT	< 2.0 J+	< 2.0	< 2.0	NT	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1-Dichloroethane	< 1.0	0.66 J	< 1.0	0.23 J	0.50 J	< 1.0	< 1.0	0.46 J	< 1.0	< 1.0	0.34 J	< 1.0	< 1.0	3.1	5.0	1.1
1,2-Dichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethylene	4.7	4.9	5.2	3.0	1.1	< 1.0	< 1.0	2.9	2.8	1.6	1.9	3.2	< 1.0	< 1.0	< 1.0	15.5
cis-1,2-Dichloroethylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	NT	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0 J+	< 2.0	< 2.0	< 2.0	< 2.0
1,4-Dioxane	NT	< 25	< 25	< 25	NT	< 25	< 25	< 25	< 25	< 25	< 25 J+	< 25 J+	< 25	< 25	< 25	< 25
Ethylbenzene	NT	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Hexanone	NT	< 5.0 J+	< 5.0	< 5.0	NT	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropyl benzene	NT	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0
4-Isopropyltoluene	NT	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	11.3
Methyl tert-butyl ether	NT	75.8	240	0.26 J	NT	< 1.0	< 1.0	1.2	< 1.0	< 1.0	0.92 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene chloride	NT	< 2.0	< 2.0	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Naphthalene	NT	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0
n-Propylbenzene	NT	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0
Tert-amyl methyl ether	NT	4.6	17.7	< 2.0	NT	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane	NT	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Tetrachloroethylene (PCE)	5.1	19.6	25.8	18.0	17.2	14.6	21.8	55.6	48.5	39.4	37.5	53.5	52.6	61.8	84.9	86.5
Tetrahydrofuran	NT	< 10	< 10	< 10	NT	< 10	< 10	< 10	< 10	< 10	< 10	< 10 J+	< 10	< 10	< 10	< 10
Toluene	NT	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)	9.8	36.3	32.9	7.3	12.5	4.4	4.2	35.2	18.9	7.1	8.0	15.7	6.6	14.3 J+	16.8	18.6
1,1,2-Trichloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene (TCE)	4.5	7.2	8.2	6.4	2.2	1.5	1.6	6.9	8.6	5.3	5.6	11.8 J+	7.2	9.8	12.9	8.2
1,2,4-Trimethylbenzene	NT	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0
1,3,5-Trimethylbenzene	NT	< 5.0	< 5.0	< 5.0	NT	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl chloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m,p-Xylene	NT	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	NT	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Xylene	NT	< 1.0	< 1.0	< 1.0	NT	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Metals	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic																
Iron																
Manganese																
Others	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Methane																
Ethane																
Ethylene																
Alkalinity																
Chloride																
Chlorine, Total Residual																
Nitrate & Nitrite as N																
Nitrogen, Nitrate																
Nitrogen, Nitrite																
Sulfate																
Sulfide																
Surfactants																
Total Organic Carbon																

Sample Location:	MW203		MW-3						
Sample Name:	MW203	MW203	MW-3	MW-3	MW-3	MW-3	MW3	MW3	MW-3
Well Screen Interval (ft bgs):	6 to 18	6 to 18	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Sample Date:	7/19/07	4/15/08	7/1/02	8/9/04	5/23/06	1/17/07	4/17/07	4/15/08	7/15/08
Collected By:	GEI	GEI	SHA	GeoInsight	GEI	GEI	GEI	GEI	GEI
Analyte									
Volatile Organic Compounds (VOCs)									
Acetone	NT	< 250	< 2500	< 2000	< 5.0	< 5.0	< 130	< 5.0	< 5.0
Benzene	NT	< 25	< 250	< 100	0.37 J	0.71	< 13	< 0.50	< 0.50
Bromobenzene	NT	< 250	< 1200	< 100	< 5.0	< 5.0	< 130	< 5.0	< 5.0
Bromodichloromethane	NT	< 50	< 250	< 100	< 1.0	< 1.0	< 25	< 1.0	< 1.0
Bromoform	NT	< 50	< 250	< 100	< 1.0	< 1.0	< 25	< 1.0	< 1.0
2-Butanone (MEK)	NT	< 250	< 2500	< 1000	< 5.0	< 5.0	< 130	< 5.0	< 5.0
n-Butylbenzene	NT	< 250	< 250	< 100	< 5.0	< 5.0	< 130	< 5.0	< 5.0
Carbon disulfide	NT	< 250	< 2500	< 5.0	< 5.0	< 5.0	< 130	< 5.0	< 5.0
Carbon tetrachloride	< 1.0	< 50	< 250	< 100	< 1.0	< 1.0	< 25	< 1.0	< 1.0
Chlorobenzene	NT	< 50	< 250	< 100	< 1.0	0.52 J	< 25	< 1.0	< 1.0
Chloroethane	< 2.0	< 100	< 5.0	< 200	< 2.0	< 2.0	< 50	< 2.0	< 2.0
Chloroform	NT	< 50	< 380	< 100	2.1	3.4	< 25	< 1.0	< 1.0
Chloromethane	NT	< 100	< 1200	< 200	< 2.0	< 2.0	< 50	< 2.0	< 2.0
1,3-Dichlorobenzene	NT	< 50	< 1200	< 100	< 1.0	< 1.0	< 25	< 1.0	< 1.0
Dichlorodifluoromethane	NT	< 100	< 2500	< 200	< 2.0	< 2.0	< 50	< 2.0	< 2.0 J+
1,1-Dichloroethane	22.2	13.0 J	< 380	< 100	< 1.0	< 1.0	< 25	< 1.0	< 1.0
1,2-Dichloroethane	< 1.0	< 50	< 250	< 100	< 1.0	< 1.0	< 25	< 1.0	< 1.0
1,1-Dichloroethylene	76.4	36.6 J	< 250	< 100	6.9	5.6	< 25	< 1.0	< 1.0
cis-1,2-Dichloroethylene	102	78.9	< 250	< 100	< 1.0	1.9	< 25	< 1.0	0.56 J
trans-1,2-Dichloroethylene	1.2	< 50	< 380	< 100	< 1.0	< 1.0	< 25	< 1.0	< 1.0
1,2-Dichloropropane	NT	< 100	< 880	< 100	< 2.0	< 2.0	< 50	< 2.0	< 2.0
1,4-Dioxane	NT	< 1300	NT	NT	< 25	< 25	< 630	< 25	< 25
Ethylbenzene	NT	< 50	< 250	< 100	< 1.0	< 1.0	< 25	< 1.0	< 1.0
2-Hexanone	NT	< 250	< 2500	< 1000	< 5.0	< 5.0	< 130	< 5.0	< 5.0
Isopropyl benzene	NT	< 250	< 250	< 100	< 5.0	< 5.0	< 130	< 5.0	< 5.0
4-Isopropyltoluene	NT	< 250	< 250	< 100	< 5.0	< 5.0	< 130	< 5.0	< 5.0
Methyl tert-butyl ether	NT	< 50	< 5.0	< 100	< 1.0	< 1.0	< 25	< 1.0	< 1.0
Methylene chloride	NT	< 100	< 2500	< 1000	< 2.0	< 2.0	71.5	< 2.0	< 2.0
Naphthalene	NT	< 250	< 1200	< 100	< 5.0	< 5.0	< 130	< 5.0	< 5.0
n-Propylbenzene	NT	< 250	< 250	< 100	< 5.0	< 5.0	< 130	< 5.0	< 5.0
Tert-amyl methyl ether	NT	< 100	NT	NT	< 2.0	< 2.0	< 50	< 2.0	< 2.0
1,1,1,2-Tetrachloroethane	NT	< 250	< 250	< 100	1.9 J	4.4 J	< 130	< 5.0	< 5.0
Tetrachloroethylene (PCE)	15500	11500	16000	16200	22100	51900	6550	400	427
Tetrahydrofuran	NT	< 50	NT	NT	< 10	< 10	< 250	< 10	< 10
Toluene	NT	< 50	< 380	< 100	0.62 J	< 1.0	< 25	< 1.0	< 1.0
1,1,1-Trichloroethane (TCA)	1710	988	< 250	< 100	39.1	68.7	11.1 J	< 1.0	0.43 J
1,1,2-Trichloroethane	0.66 J	< 50	< 380	< 100	< 1.0	< 1.0	< 25	< 1.0	< 1.0
Trichloroethylene (TCE)	979	618	< 250	< 100	86.6	247	13.8 J	1.9	3.5
1,2,4-Trimethylbenzene	NT	< 250	< 1200	< 100	< 5.0	< 5.0	< 130	< 5.0	< 5.0
1,3,5-Trimethylbenzene	NT	< 250	< 1200	< 100	< 5.0	< 5.0	< 130	< 5.0	< 5.0
Vinyl chloride	< 1.0	< 50	< 5.0	< 100	< 1.0	< 1.0	< 25	< 1.0	< 1.0
m,p-Xylene	NT	< 50	< 250	< 200	< 1.0	< 1.0	< 25	< 1.0	< 1.0
o-Xylene	NT	< 50	< 250	< 100	< 1.0	< 1.0	< 25	< 1.0	< 1.0
Total Xylene	NT	< 50	ND	ND	< 1.0	< 1.0	< 25	< 1.0	< 1.0
Metals	NT	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic									
Iron									
Manganese									
Others	NT	NT	NT	NT	NT	NT	NT	NT	NT
Methane									
Ethane									
Ethylene									
Alkalinity									
Chloride									
Chlorine, Total Residual									
Nitrate & Nitrite as N									
Nitrogen, Nitrate									
Nitrogen, Nitrite									
Sulfate									
Sulfide									
Surfactants									
Total Organic Carbon									

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes refer to the laboratory data reports.
2. ft bgs = feet below ground surface.
3. µg/l = micrograms per liter.
4. "<" = The analyte was not detected at a concentration above the specified reporting limit.
5. SHA = Sanborn Head & Associates.
6. Results in bold exceed the current applicable Method 1 GW2 standard.
7. FD = Field Duplicate Sample.
8. NT = Not Tested.

Qualifying Notes:

A The result is estimated due to exceedence of holding time criteria.
B The analyte found in associated method blank.
C+ The result has a high bias due to surrogate recovery above upper control limits.
E The value exceeds the calibration range.
F+ The result has a high bias due to matrix spike recovery above upper control limits.
F- The result has a low bias due to matrix spike recovery below lower control limits.
G The result is estimated due to duplicate precision outside control limits.
J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.
R The result is rejected due to gross exceedence of minimum response factor criteria.

Table 3-2

Chemical Testing Results - Groundwater

50 Tufts Street
Somerville, Massachusetts

Sample Location:			MW-3 (continued)					MW- CS1	SH-1	SH-3	SH-4
Sample Name:			MW-3	MW-3	MW-3	MW-3	MW-3	MW-CS1	SH-1	SH-3	SH-4
Well Screen Interval (ft bgs):			Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	9 to 14	8 to 13	11 to 16
Sample Date:			10/21/08	1/14/09	4/14/09	7/15/09	10/16/09	5/23/07	8/9/04	8/9/04	5/25/06
Collected By:			GEI	GEI	GEI	GEI	GEI	GEI	GeoInsight	GeoInsight	GEI
Analyte	Method	Units									
Volatile Organic Compounds (VOCs)											
Acetone	8260	µg/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 4000	< 2000	30.0
Benzene			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 200	< 100	< 0.50
Bromobenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 200	< 100	< 5.0
Bromodichloromethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 200	< 100	< 1.0
Bromoform			< 1.0	< 1.0 J+	< 1.0	< 1.0	< 1.0	< 1.0	< 200	< 100	< 1.0
2-Butanone (MEK)			< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 5.0	< 2000	< 1000	< 5.0
n-Butylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 200	< 100	< 5.0
Carbon disulfide			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	0.54 J	< 1000	< 5.0	< 5.0
Carbon tetrachloride			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 200	< 100	< 1.0
Chlorobenzene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 200	< 100	< 1.0
Chloroethane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 400	< 200	< 2.0
Chloroform			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 200	< 100	13.3
Chloromethane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 400	< 200	< 2.0
1,3-Dichlorobenzene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 200	< 100	< 1.0
Dichlorodifluoromethane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 400	< 200	< 2.0
1,1-Dichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 200	< 100	15.9
1,2-Dichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 200	< 100	103
1,1-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 200	< 100	556 E
cis-1,2-Dichloroethylene			< 1.0	< 1.0	< 1.0	0.43 J	2.3 J+	< 1.0	< 200	< 100	16.6
trans-1,2-Dichloroethylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 200	< 100	< 1.0
1,2-Dichloropropane			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 200	< 100	< 2.0
1,4-Dioxane			< 25	< 25	< 25	< 25	< 25	< 25	NT	NT	57700
Ethylbenzene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 200	< 100	< 1.0
2-Hexanone			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2000	< 1000	5.3
Isopropyl benzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 200	< 100	< 5.0
4-Isopropyltoluene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 200	< 100	< 5.0
Methyl tert-butyl ether			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	66.4	< 200	< 100	< 1.0
Methylene chloride			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2000	< 1000	12.2
Naphthalene			< 5.0	< 5.0	< 5.0	< 5.0 J+	< 5.0	< 5.0	< 200	< 5.0	< 5.0
n-Propylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 200	< 100	< 5.0
Tert-amyl methyl ether			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0 J+	< 2.0	NT	NT	1.9 J
1,1,1,2-Tetrachloroethane			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 200	< 100	40.4
Tetrachloroethylene (PCE)			606	176	141	280	391	< 1.0	49700	19500	7240
Tetrahydrofuran			< 10	< 10	< 10	< 10	< 10	< 10	NT	NT	< 10
Toluene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 200	< 100	1.8
1,1,1-Trichloroethane (TCA)			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1150	2070	7610
1,1,2-Trichloroethane			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 200	< 100	172
Trichloroethylene (TCE)			4.2	1.3	1.3	2.7	3.6	< 1.0	906	1440	7580
1,2,4-Trimethylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 200	< 100	< 5.0
1,3,5-Trimethylbenzene			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 200	< 100	< 5.0
Vinyl chloride			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 200	< 100	< 1.0
m,p-Xylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 400	< 200	< 1.0
o-Xylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 200	< 100	< 1.0
Total Xylene			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	< 1.0
Metals	6010B	µg/l	NT	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic											
Iron											
Manganese											
Others			NT	NT	NT	NT	NT		NT	NT	NT
Methane	8015	µg/l						NT			
Ethane	8015	µg/l						NT			
Ethylene	8015	µg/l						NT			
Alkalinity	E310.1	µg/l						NT			
Chloride	E325.3	µg/l						275000			
Chlorine, Total Residual	E330.4	µg/l						< 50			
Nitrate & Nitrite as N	E353.2	µg/l						NT			
Nitrogen, Nitrate	E353.2	µg/l						NT			
Nitrogen, Nitrite	E354.1	µg/l						NT			
Sulfate	E375.4	µg/l						NT			
Sulfide	E376.1	µg/l						NT			
Surfactants	E425.1	µg/l						NT			
Total Organic Carbon	E415.1	µg/l						NT			

Sample Location:	SH-MW1					SH-MW2						
Sample Name:	SH-MW1	SH-MW-1	SH-MW-1	SH-MW1	SHMW1	SH-MW2	SH-MW2	SH-MW-2	SH-MW-2	SH-MW2	SHMW2	SH-MW2
Well Screen Interval (ft bgs):	10 to 30	10 to 30	10 to 30	10 to 30	10 to 30	10 to 25	10 to 25	10 to 25	10 to 25	10 to 25	10 to 25	10 to 25
Sample Date:	7/8/02	5/23/06	10/4/06	1/16/07	4/12/07	7/8/02	8/16/04	5/23/06	10/4/06	1/16/07	4/16/07	7/19/07
Collected By:	SHA	GEI	GEI	GEI	GEI	SHA	GeoInsight	GEI	GEI	GEI	GEI	GEI
Analyte												
Volatile Organic Compounds (VOCs)												
Acetone	< 2500	< 5.0	< 5.0	< 5.0	< 5.0	< 250	< 2000	< 5.0	< 5.0	< 5.0	< 10	NT
Benzene	< 250	< 0.50	0.61	< 0.50	0.33 J	< 25	< 100	< 0.50	< 0.50	< 0.50	< 1.0	NT
Bromobenzene	< 1200	< 5.0	< 5.0	< 5.0	< 5.0	< 120	< 100	< 5.0	< 5.0	< 5.0	< 10	NT
Bromodichloromethane	< 250	< 1.0	< 1.0	< 1.0	< 1.0	< 25	< 100	< 1.0	< 1.0	< 1.0	< 2.0	NT
Bromoform	< 250	< 1.0	< 1.0	< 1.0	< 1.0	< 25	< 100	< 1.0	< 1.0	< 1.0	< 2.0	NT
2-Butanone (MEK)	< 2500	< 5.0	< 5.0	< 5.0	< 5.0	< 250	< 1000	< 5.0	< 5.0	< 5.0	< 10	NT
n-Butylbenzene	< 250	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 100	< 5.0	< 5.0	< 5.0	< 10	NT
Carbon disulfide	< 2500	< 5.0	< 5.0	< 5.0	< 5.0	< 250	< 5.0	< 5.0	< 5.0	< 5.0	< 10	NT
Carbon tetrachloride	< 250	< 1.0	< 1.0	< 1.0	< 1.0	< 25	< 100	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
Chlorobenzene	< 250	< 1.0	0.52 J	< 1.0	< 1.0	< 25	< 100	< 1.0	< 1.0	< 1.0	< 2.0	NT
Chloroethane	< 5.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 200	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0
Chloroform	< 380	2.1	4.6	1.7	3.4	< 38	< 100	< 1.0	< 1.0	< 1.0	< 2.0	NT
Chloromethane	< 1200	< 2.0	< 2.0	< 2.0	< 2.0	< 120	< 200	< 2.0	< 2.0	< 2.0	< 4.0	NT
1,3-Dichlorobenzene	< 1200	< 1.0	< 1.0	< 1.0	< 1.0	< 120	< 100	< 1.0	< 1.0	< 1.0	< 2.0	NT
Dichlorodifluoromethane	< 2500	< 2.0	< 2.0	< 2.0	< 2.0	< 250	< 200	< 2.0	< 2.0	< 2.0	< 4.0	NT
1,1-Dichloroethane	< 380	11.4	12.0	8.5	12.7	< 38	< 100	1.0	20.9	5.7	< 2.0	12.4
1,2-Dichloroethane	< 250	< 1.0	< 1.0	< 1.0	< 1.0	< 25	< 100	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
1,1-Dichloroethylene	< 250	11.7	19.3	9.0	24.4	< 25	< 100	10.1	45.0	9.8	2.1	23.8
cis-1,2-Dichloroethylene	< 250	2.1	7.3	11.2	2.7	< 25	< 100	3.9	45.7	14.7	1.4 J	26.1
trans-1,2-Dichloroethylene	< 380	< 1.0	< 1.0	< 1.0	< 1.0	< 38	< 100	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
1,2-Dichloropropane	< 880	< 2.0	< 2.0	< 2.0	< 2.0	< 88	< 100	< 2.0	< 2.0	< 2.0	< 4.0	NT
1,4-Dioxane	NT	< 25	< 25 R	< 25	< 25	NT	NT	< 25	< 25 R	< 25	< 5.0	NT
Ethylbenzene	< 250	< 1.0	< 1.0	< 1.0	< 1.0	< 25	< 100	< 1.0	< 1.0	< 1.0	< 2.0	NT
2-Hexanone	NT	< 5.0	< 5.0	< 5.0	< 5.0	NT	< 1000	< 5.0	< 5.0	< 5.0	< 10	NT
Isopropyl benzene	< 250	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 100	< 5.0	< 5.0	< 5.0	< 10	NT
4-Isopropyltoluene	< 250	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 100	< 5.0	< 5.0	< 5.0	< 10	NT
Methyl tert-butyl ether	< 5.0	< 1.0	0.71 J J+	< 1.0	0.74 J J+	< 5.0	< 100	< 1.0	8.7 J+	1.4	< 2.0	NT
Methylene chloride	< 2500	< 2.0	< 2.0	< 2.0	< 2.0	< 250	< 1000	< 2.0	< 2.0	< 2.0	2.3 J	NT
Naphthalene	< 1200	< 5.0	< 5.0	< 5.0	< 5.0	< 120	< 100	< 5.0	< 5.0	< 5.0	< 10	NT
n-Propylbenzene	< 250	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 100	< 5.0	< 5.0	< 5.0	< 10	NT
Tert-amyl methyl ether	NT	< 2.0	< 2.0	< 2.0	< 2.0	NT	NT	< 2.0	< 2.0	< 2.0	< 4.0	NT
1,1,1,2-Tetrachloroethane	< 250	< 5.0	< 5.0	< 5.0 F+	< 5.0	< 25	< 100	< 5.0	< 5.0	< 5.0 F+	< 10	NT
Tetrachloroethylene (PCE)	21000	16200	28300	31700 F+	48900	2000	7170	1730	7190	2880 F+	726	3320
Tetrahydrofuran	NT	< 10	< 10	< 10	< 10	NT	NT	< 10	< 10	< 10	< 20	NT
Toluene	< 380	0.61 J	0.47 J	< 1.0	0.36 J	< 38	< 100	< 1.0	< 1.0	< 1.0	< 2.0	NT
1,1,1-Trichloroethane (TCA)	< 250	34.5	69.7 J+	31.4	27.9 J+	660	1550	158	1330	360	44.1	539
1,1,2-Trichloroethane	< 380	< 1.0	< 1.0	< 1.0	< 1.0	< 38	< 100	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
Trichloroethylene (TCE)	< 5.0	141	317	141	159	190	572	92.8	486	171	26.5	354
1,2,4-Trimethylbenzene	< 1200	< 5.0	< 5.0	< 5.0	< 5.0	< 120	< 100	< 5.0	< 5.0	< 5.0	< 10	NT
1,3,5-Trimethylbenzene	< 1200	< 5.0	< 5.0	< 5.0	< 5.0	< 120	< 100	< 5.0	< 5.0	< 5.0	< 10	NT
Vinyl chloride	< 5.0	< 1.0	< 1.0	< 1.0	0.55 J	< 5.0	< 100	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0
m,p-Xylene	< 250	< 1.0	< 1.0	< 1.0	< 1.0	< 25	< 200	< 1.0	< 1.0	< 1.0	< 2.0	NT
o-Xylene	< 250	< 1.0	< 1.0	< 1.0	< 1.0	< 25	< 100	< 1.0	< 1.0	< 1.0	< 2.0	NT
Total Xylene	ND	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	< 1.0	< 1.0	< 1.0	< 2.0	NT
Metals	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Arsenic												
Iron												
Manganese												
Others	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Methane												
Ethane												
Ethylene												
Alkalinity												
Chloride												
Chlorine, Total Residual												
Nitrate & Nitrite as N												
Nitrogen, Nitrate												
Nitrogen, Nitrite												
Sulfate												
Sulfide												
Surfactants												
Total Organic Carbon												

Sample Location:	SH-MW3								COBBLE-IR-1
Sample Name:	SH-MW3	SH-MW-3	SH-MW-3	SH-MW3	SHMW3	SHMW3	SHMW3	SHMW3	COBBLE-IR-1
Well Screen Interval (ft bgs):	10 to 24	10 to 24	10 to 24	10 to 24	10 to 24	10 to 24	10 to 24	10 to 24	Unknown
Sample Date:	7/8/02	5/23/06	10/4/06	1/17/07	4/12/07	4/15/08	4/13/10	4/21/11	6/25/07
Collected By:	SHA	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Analyte									
Volatile Organic Compounds (VOCs)									
Acetone	< 2500	< 5.0	< 5.0	< 500	< 5.0	< 500	< 5.0	< 500	5.8
Benzene	< 250	< 0.50	< 0.50	< 50	< 0.50	< 500	< 0.50	< 50	< 0.50
Bromobenzene	< 1200	< 5.0	< 5.0	< 500	< 5.0	< 500	< 5.0	< 500	< 5.0
Bromodichloromethane	< 250	< 1.0	< 1.0	< 100	< 1.0	< 100	< 1.0	< 100	0.32 J
Bromoform	< 250	< 1.0	< 1.0	< 100	< 1.0	< 100	< 1.0	< 100	< 1.0
2-Butanone (MEK)	< 2500	< 5.0	< 5.0	< 500	< 5.0	< 500	< 5.0	< 500	< 5.0
n-Butylbenzene	< 250	< 5.0	< 5.0	< 500	< 5.0	< 500	< 5.0	< 500	< 5.0
Carbon disulfide	< 2500	< 5.0	< 5.0	< 500	< 5.0	< 500	< 5.0	< 500	< 5.0
Carbon tetrachloride	< 250	< 1.0	< 1.0	< 100	< 1.0	< 100	< 1.0	< 100	< 1.0
Chlorobenzene	< 250	< 1.0	< 1.0	< 100	< 1.0	< 100	< 1.0	< 100	< 1.0
Chloroethane	< 5.0	< 2.0	< 2.0	< 200	< 2.0	< 200	< 2.0	< 200	< 2.0
Chloroform	< 380	0.88 J	0.81 J	< 100	1.1	< 100	< 1.0	< 100	5.6
Chloromethane	< 1200	< 2.0	< 2.0	< 200	< 2.0	< 200	< 2.0	< 200	< 2.0
1,3-Dichlorobenzene	< 1200	< 1.0	< 1.0	< 100	< 1.0	< 100	< 1.0	< 100	< 1.0
Dichlorodifluoromethane	< 2500	< 2.0	< 2.0	< 200	< 2.0	< 200	< 2.0	< 200	< 2.0 R
1,1-Dichloroethane	< 380	21.6	36.5	< 100	24.5	< 100	19.5	< 100	< 1.0
1,2-Dichloroethane	< 250	< 1.0	< 1.0	< 100	< 1.0	< 100	< 1.0	< 100	< 1.0
1,1-Dichloroethylene	< 250	91.0	84.4	< 100	91.3	< 100	14.2	< 100	< 1.0
cis-1,2-Dichloroethylene	< 250	37.2	102	< 100	39.8	34.5 J	19.8	< 100	< 1.0
trans-1,2-Dichloroethylene	< 380	< 1.0	1.1	< 100	< 1.0	< 100	< 1.0	< 100	< 1.0
1,2-Dichloropropane	< 880	< 2.0	< 2.0	< 200	< 2.0	< 200	< 2.0	< 200	< 2.0
1,4-Dioxane	NT	< 25	< 25 R	< 2500	< 25	< 2500	< 25	< 2500	< 25
Ethylbenzene	< 250	< 1.0	< 1.0	180	< 1.0	< 100	< 1.0	< 100	< 1.0
2-Hexanone	NT	< 5.0	< 5.0	< 500	< 5.0	< 500	< 5.0	< 500	< 5.0
Isopropyl benzene	< 250	< 5.0	< 5.0	< 500	< 5.0	< 500	< 5.0	< 500	< 5.0
4-Isopropyltoluene	< 250	< 5.0	< 5.0	< 500	< 5.0	< 500	< 5.0	< 500	< 5.0
Methyl tert-butyl ether	< 5.0	5.1	8.2 J+	< 100	2.4 J+	< 100	0.83 J	< 100	< 1.0
Methylene chloride	< 2500	< 2.0	< 2.0	< 200	< 2.0	< 200	< 2.0	450	< 2.0
Naphthalene	< 1200	< 5.0	< 5.0	392 J	< 5.0	< 500	< 5.0	< 500	< 5.0
n-Propylbenzene	< 250	< 5.0	< 5.0	< 500	< 5.0	< 500	< 5.0	< 500	< 5.0
Tert-amyl methyl ether	NT	< 2.0	< 2.0	< 200	< 2.0	< 200	< 2.0	< 200	< 2.0
1,1,1,2-Tetrachloroethane	< 250	< 5.0	< 5.0	< 500	< 5.0	< 500	< 5.0	< 500	< 5.0
Tetrachloroethylene (PCE)	26000	16900	28300	29700	34000	15200	20300	16900	< 1.0
Tetrahydrofuran	NT	< 10	< 10	< 1000	< 10	< 1000	< 10	< 1000	< 10
Toluene	< 380	< 1.0	< 1.0	< 100	< 1.0	< 100	< 1.0	< 100	< 1.0
1,1,1-Trichloroethane (TCA)	1200	989	1680	806	621 E J+	119	19.8 J	< 100	< 1.0
1,1,2-Trichloroethane	< 380	< 1.0	< 1.0	< 100	< 1.0	< 100	< 1.0	< 100	< 1.0
Trichloroethylene (TCE)	870	482	1030	709	1030	306	383.0	342	< 1.0
1,2,4-Trimethylbenzene	< 1200	< 5.0	< 5.0	306 J	< 5.0	< 500	< 5.0	< 500	< 5.0
1,3,5-Trimethylbenzene	< 1200	< 5.0	< 5.0	70.2 J	< 5.0	< 500	< 5.0	< 500	< 5.0
Vinyl chloride	< 5.0	< 1.0	< 1.0	< 100	0.83 J	< 100	< 1.0	< 100	< 1.0
m,p-Xylene	< 250	< 1.0	< 1.0	484	< 1.0	< 100	< 1.0	< 100	< 1.0
o-Xylene	< 250	< 1.0	< 1.0	< 100	< 1.0	< 100	< 1.0	< 100	< 1.0
Total Xylene	ND	< 1.0	< 1.0	543	< 1.0	< 100	< 1.0	< 100	< 1.0
Metals	NT	NT	NT		NT	NT	NT	NT	NT
Arsenic				< 10					
Iron				255					
Manganese									
Others	NT	NT	NT		NT	NT	NT	NT	NT
Methane				< 10					
Ethane				< 10					
Ethylene				< 10					
Alkalinity				208000					
Chloride				362000					
Chlorine, Total Residual				NT					
Nitrate & Nitrite as N				1900					
Nitrogen, Nitrate				1900					
Nitrogen, Nitrite				30					
Sulfate				62600					
Sulfide				< 2000					
Surfactants				< 100					
Total Organic Carbon				< 1000					

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes refer to the laboratory data reports.
2. ft bgs = feet below ground surface.
3. µg/l = micrograms per liter.
4. "<" = The analyte was not detected at a concentration above the specified reporting limit.
5. SHA = Sanborn Head & Associates.
6. Results in bold exceed the current applicable Method 1 GW2 standard.
7. FD = Field Duplicate Sample.
8. NT = Not Tested.

Qualifying Notes:

- A The result is estimated due to exceedence of holding time criteria.
- B The analyte found in associated method blank.
- C+ The result has a high bias due to surrogate recovery above upper control limits.
- E The value exceeds the calibration range.
- F+ The result has a high bias due to matrix spike recovery above upper control limits.
- F- The result has a low bias due to matrix spike recovery below lower control limits.
- G The result is estimated due to duplicate precision outside control limits.
- J The reported result is below the laboratory reporting limit and is estimated.
- J+ The reported result is estimated.
- R The result is rejected due to gross exceedence of minimum response factor criteria.

Table 3-3

Indoor Air Sampling and EPEM Monitoring December 16, 2010 through June 23, 2011

Residential and Commercial Properties
Somerville, Massachusetts

Property	Property Type	Indoor Air Sampling[1]	EPEM Inspection[2]	Indoor Air Sampling Rationale
91-93 Franklin Street	Residential	02/01/11	02/01/11	Post-EPEM evaluation
95 Franklin Street	Residential	01/05/11, 03/10/11, 06/23/11	01/05/11, 03/10/11	EPEM modification in progress
95R Franklin Street	Residential	Not Sampled	06/09/11	Post-EPEM evaluation
162-164 Glen Street	Residential	02/04/11	--	Confirm No Significant Risk
166-168 Glen Street	Residential	02/03/11	02/03/11	Post-EPEM evaluation
9 Knowlton Street	Residential	Not Sampled	01/28/11	Post-EPEM evaluation
13 Knowlton Street	Residential	01/31/11	01/31/11	Post-EPEM evaluation
17 Knowlton Street	Residential	02/26/11	02/26/11	Post-EPEM modification evaluation
31-33 Knowlton Street	Residential	Not Sampled	02/26/11	Post-EPEM evaluation
32 Knowlton Street	Residential	03/07/11	03/07/11	Post-EPEM modification evaluation
35-37 Knowlton Street	Residential	03/10/11	03/11/11	Post-EPEM evaluation
4 Morton Street	Residential	Not Sampled	03/23/11	Post-EPEM evaluation
10 Morton Street	Residential	03/04/11	03/04/11	Post-EPEM evaluation
13 Morton Street	Residential	Not Sampled	03/08/11	Post-EPEM evaluation
18 Morton Street	Residential	02/23/11	02/23/11	Post-EPEM evaluation
19-19A Morton Street	Residential	04/09/11	04/09/11	Post-EPEM evaluation
23 Tufts Street	Residential	Not Sampled	02/26/11	Post-EPEM evaluation
27 Tufts Street	Residential	02/23/11, 06/15/11	02/23/11	Post-EPEM evaluation
60 Tufts Street (Unit 1, 4 and 5)	Residential	02/04/11 02/04/11 03/07/11	Monthly	Post-EPEM evaluation
103 Washington Street	Commercial	Not Sampled	01/31/11	Post-EPEM evaluation
117 Washington Street	Residential	03/08/11	--	Vapor intrusion pathway evaluation

General Notes:

1. See Appendix D for Air Sampling Checklists.
2. See Section 4.2.2 for a description of EPEM Inspection activities. 60 Tufts Street EPEM is inspected monthly; see Section 5.2.
3. EPEM = Exposure Pathway Elimination Measure.
4. "--" = No EPEM installed at this property.

Table 3-4
Chemical Testing Results - Pre- and Post-EPEM Indoor Air
91-93 Franklin Street
Somerville, Massachusetts

	Sample Location:	**91-93 Franklin Street Pre-EPEM**			
	Sample Name:	**93 Franklin-1**		**93 Franklin-B**	
	Sample Date:	**2/14/07**		**2/14/07**	
	Units:	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**
Analyte	**Method**				
Volatile Organic Compounds (VOCs)	TO-15				
Tetrachloroethylene (PCE)		0.95 J	0. 14 J	3.5	0.52

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. The samples collected after April 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-4

Chemical Testing Results - Pre- and Post-EPEM Indoor Air

91-93 Franklin Street
Somerville, Massachusetts

	Sample Location:	91-93 Franklin Street Post-EPEM							
	Sample Name:	91-93 FRANK-1		91-93 FRANK-B		91-93FRAN-1		91-93FRAN-B	
	Sample Date:	4/8/09		4/8/09		3/24/10		3/24/10	
	Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. The samples collected after April 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-4
Chemical Testing Results - Pre- and Post-EPEM Indoor Air
91-93 Franklin Street
Somerville, Massachusetts

	Sample Location:	91-93 Franklin Street Post-EPEM (continued)							
	Sample Name:	91-93FRAN-1		91-93FRAN-B		91-93FRAN-1		91-93FRAN-B	
	Sample Date:	12/7/10		12/7/2010		2/2/11		2/2/2011	
	Units:	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. The samples collected after April 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-5
Chemical Testing Results - Post-EPEM Indoor Air
95 Franklin Street
Somerville, Massachusetts

	Sample Location:	**95 Franklin Street with Active EPEM (SSDS)**			
	Sample Name:	**95FRAN-1**		**95FRAN-B1**	
	Sample Date:	**6/7/07**		**6/7/07**	
	Units:	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**
Analyte	**Method**				
Volatile Organic Compounds (VOCs)	TO-15				
Carbon tetrachloride		0.63 J	0.10 J	0.69 J	0.11 J
Tetrachloroethylene (PCE)		8.8	1.30	8.1	1.2
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. SSDS = Sub-Slab Depressurization System.
7. NT = Not Tested.
8. The samples collected after June 2007 were collected over a 24-hour period ending on the date shown.
9. **No pre-EPEM indoor air samples were collected. The EPEM was installed based on sub-slab soil vapor testing results.**

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-5
Chemical Testing Results - Post-EPEM Indoor Air
95 Franklin Street
Somerville, Massachusetts

	Sample Location:	95 Franklin Street with Passive EPEM							
	Sample Name:	95 FRAN-1		95 FRAN-B		95FRAN-1		95FRAN-B	
	Sample Date:	1/5/11		1/5/11		3/10/11		3/10/11	
	Units:	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		NT	NT	NT	NT	NT	NT	NT	NT
Tetrachloroethylene (PCE)		14	2.1	29	4.3	22	3.2	43	6.4
Trichloroethylene (TCE)		< 1.1	< 0.20	0.91 J	0.17 J	0.86 J	0.11 J	1.6	0.30

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. SSDS = Sub-Slab Depressurization System.
7. NT = Not Tested.
8. The samples collected after June 2007 were collected over a 24-hour period ending on the date shown.
9. **No pre-EPEM indoor air samples were collected. The EPEM was installed based on sub-slab soil vapor testing results.**

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-5
Chemical Testing Results - Post-EPEM Indoor Air
95 Franklin Street
Somerville, Massachusetts

	Sample Location:	95 Franklin Street with Passive EPEM (continued)			
	Sample Name:	95FRAN-1		95FRAN-B	
	Sample Date:	6/23/11		6/23/11	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	**Method**				
Volatile Organic Compounds (VOCs)	TO-15				
Carbon tetrachloride		NT	NT	NT	NT
Tetrachloroethylene (PCE)		1.5	0.2	2.7	0.4
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. SSDS = Sub-Slab Depressurization System.
7. NT = Not Tested.
8. The samples collected after June 2007 were collected over a 24-hour period ending on the date shown.
9. **No pre-EPEM indoor air samples were collected. The EPEM was installed based on sub-slab soil vapor testing results.**

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-6
Chemical Testing Results - Indoor Air
162-164 Glen Street
Somerville, Massachusetts

	Sample Location:	162-164 Glen Street							
	Sample Name:	162GLEN-1		162GLEN-B		162GLEN-1		162GLEN-B	
	Sample Date:	8/13/07		8/13/07		1/28/10		1/28/10	
	Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		0.63 J	0.10 J	0.69 J	0.11 J	< 1.3	< 0.20	< 1.3	< 0.20
1,2-Dichloroethane		0.65 J	0.16 J	2.5	0.61	< 0.81	< 0.20	< 0.81	< 0.20
Tetrachloroethylene (PCE)		2.8	0.41	3.7	0.54	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		0.53 J	0.097 J	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. NT = Not Tested.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-6
Chemical Testing Results - Indoor Air
162-164 Glen Street
Somerville, Massachusetts

	Sample Location:	**162-164 Glen Street**							
	Sample Name:	**162-164-GLEN-1**		**162-164-GLEN-B**		**162-164-GLEN-1**		**162-164-GLEN-B**	
	Sample Date:	**11/19/10**		**11/19/10**		**2/4/11**		**2/4/11**	
	Units:	**$\mu g/m^3$**	**ppbv**	**$\mu g/m^3$**	**ppbv**	**$\mu g/m^3$**	**ppbv**	**$\mu g/m^3$**	**ppbv**
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	NT	NT	NT	NT
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	NT	NT	NT	NT
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. NT = Not Tested.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-7
Chemical Testing Results - Pre- and Post-EPEM Indoor Air
166-168 Glen Street
Somerville, Massachusetts

	Sample Location:	**166-168 Glen Street Pre-EPEM**			
	Sample Name:	**166GLEN-1**		**166GLEN-B**	
	Sample Date:	**9/7/07**		**9/7/07**	
	Units:	**µg/m3**	**ppbv**	**µg/m3**	**ppbv**
Analyte	**Method**				
Volatile Organic Compounds (VOCs)	TO-15				
Carbon tetrachloride		0.88 J	0.14 J	0.75 J	0.12 J
Tetrachloroethylene (PCE)		5.0	0.74	4.1	0.61
1,1,1-Trichloroethane (TCA)		0.47 J	0.087 J	0.65 J	0.12 J

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. NT = Not Tested.
7. The samples collected in November 2010 were collected over a 24-hour period from November 29 to November 30, 2010.
8. The samples collected in Febuary 2011 were collected over a 24-hour period from February 3 to 4, 2011.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is is estimated.

Table 3-7

Chemical Testing Results - Pre- and Post-EPEM Indoor Air

166-168 Glen Street
Somerville, Massachusetts

	Sample Location:	166-168 Glen Street Post-EPEM							
	Sample Name:	166GLEN-1		166GLEN-B		166-168GLEN-1		166-168GLEN-B	
	Sample Date:	11/30/10		11/30/10		2/5/11		2/5/11	
	Units:	µg/m3	ppbv	µg/m3	ppbv	µg/m3	ppbv	µg/m3	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		NT	NT	NT	NT	NT	NT	NT	NT
Tetrachloroethylene (PCE)		< 1.4 J+	< 0.20 J+	< 1.4 J+	< 0.20 J+	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1 J+	< 0.20 J+	< 1.1 J+	< 0.20 J+	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. NT = Not Tested.
7. The samples collected in November 2010 were collected over a 24-hour period from November 29 to November 30, 2010.
8. The samples collected in Febuary 2011 were collected over a 24-hour period from February 3 to 4, 2011.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is is estimated.

Table 3-8
Chemical Testing Results - Pre- and Post-EPEM Indoor Air
13 Knowlton Street
Somerville, Massachusetts

	Sample Location:	13 Knowlton Street Pre-EPEM					
	Sample Name:	13KNOW-B		13KNOW-1		13KNOW-B	
	Sample Date:	8/28/07		8/28/07		11/7/07	
	Collected By:	GEI		GEI		GEI	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	**Method**						
Volatile Organic Compounds (VOCs)	TO-15						
Carbon tetrachloride		0.69 J	0.11 J	0.60 J	0.096 J	< 1.3	< 0.20
1,2-Dichloroethane		3.1	0.77	< 0.81	< 0.20	1.1	0.27
Tetrachloroethylene (PCE)		6.0	0.89	4.5	0.67	< 1.4	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. NT = Not Tested.
7. The samples collected after November 2007 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-8

Chemical Testing Results - Pre- and Post-EPEM Indoor Air

13 Knowlton Street
Somerville, Massachusetts

	Sample Location:	13 Knowlton Street Post-EPEM							
	Sample Name:	13KNOW-1		13KNOW-B		13KNOW-1		13KNOW-B	
	Sample Date:	3/3/10		3/3/10		2/1/11		2/1/11	
	Collected By:	GEI		GEI		GEI		GEI	
	Units:	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	NT	NT	NT	NT
1,2-Dichloroethane		3.6	0.89	< 0.81	< 0.20	NT	NT	NT	NT
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. NT = Not Tested.
7. The samples collected after November 2007 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-9
Chemical Testing Results - Pre- and Post-EPEM Indoor Air
17 Knowlton Street
Somerville, Massachusetts

	Sample Location:	17 Knowlton Street Pre-EPEM			
	Sample Name:	17KNOW-1		17KNOW-B	
	Sample Date:	10/5/07		10/5/07	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	**Method**				
Volatile Organic Compounds (VOCs)	TO-15				
Carbon tetrachloride		0.63 J	0.10 J	0.60 J	0.095 J
1,2-Dichloroethane		0.71 J	0.13 J	< 1.1	< 0.20
Tetrachloroethylene (PCE)		1.7	0.25	2.7	0.40

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. NT = Not Tested.
7. The samples collected after June 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-9
Chemical Testing Results - Pre- and Post-EPEM Indoor Air
17 Knowlton Street
Somerville, Massachusetts

	Sample Location:	17 Knowlton Street Post-EPEM							
	Sample Name:	17KNOW-1		17KNOW-B		17KNOW-1		17KNOW-B	
	Sample Date:	5/13/09		5/13/09		6/5/09		6/5/09	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20
1,2-Dichloroethane		0.81	0.20	< 0.81	< 0.20	0.93	0.23	< 0.81	< 0.20
Tetrachloroethylene (PCE)		1.6	0.23	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. NT = Not Tested.
7. The samples collected after June 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-9

Chemical Testing Results - Pre- and Post-EPEM Indoor Air

17 Knowlton Street

Somerville, Massachusetts

	Sample Location:	**17 Knowlton Street Post-EPEM (continued)**					
	Sample Name:	**17KNOW-B**		**17KNOW-1**		**17KNOW-B**	
	Sample Date:	**11/19/10**		**2/24/11**		**2/24/11**	
	Units:	**$\mu g/m^3$**	**ppbv**	**$\mu g/m^3$**	**ppbv**	**$\mu g/m^3$**	**ppbv**
Analyte	**Method**						
Volatile Organic Compounds (VOCs)	TO-15						
Carbon tetrachloride		< 1.3	< 0.20	NT	NT	NT	NT
1,2-Dichloroethane		< 0.81	< 0.20	NT	NT	NT	NT
Tetrachloroethylene (PCE)		< 1.4	< 0.20	1.1 J	0.16 J	3.3	0.49

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. NT = Not Tested.
7. The samples collected after June 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-10
Chemical Testing Results - Pre- and Post-EPEM Indoor Air
32 Knowlton Street
Somerville, Massachusetts

	Location Name:	**32 Knowlton Street Pre-EPEM**							
	Sample Name:	**32KNOW-1**		**32KNOW-B**		**32KNOW-1**		**32KNOW-B**	
	Sample Date:	**10/30/08**		**10/30/08**		**1/16/09**		**1/16/09**	
	Units:	**$\mu g/m^3$**	**ppbv**	**$\mu g/m^3$**	**ppbv**	**$\mu g/m^3$**	**ppbv**	**$\mu g/m^3$**	**ppbv**
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		0.58 J	0.092 J	0.61 J	0.097 J	0.63 J	0.10 J	0.57 J	0.091 J
1,2-Dichloroethane		0.49 J	0.12 J	< 0.81	< 0.20	< 0.81	< 0.20	0.49 J	0.12 J
cis-1,2- Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	0.59 J	0.15 J
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	5.6	0.82	20	3.0
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	0.91 J	0.17 J

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. NT = Not Tested.
7. The samples collected after January 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-10
Chemical Testing Results - Pre- and Post-EPEM Indoor Air
32 Knowlton Street
Somerville, Massachusetts

	Location Name:	32 Knowlton Street Post-EPEM							
	Sample Name:	32KNOW-1		32KNOW-B		32KNOW-1		32KNOW-B	
	Sample Date:	7/31/09		7/31/09		1/29/10		1/29/10	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	3.0	0.73	< 0.81	< 0.20	< 0.81	< 0.20
cis-1,2- Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. NT = Not Tested.
7. The samples collected after January 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-10
Chemical Testing Results - Pre- and Post-EPEM Indoor Air
32 Knowlton Street
Somerville, Massachusetts

	Location Name:	32 Knowlton Street Post-EPEM (continued)							
	Sample Name:	32KNOW-1		32KNOW-B		32KNOW-1		32KNOW-B	
	Sample Date:	11/19/10		11/19/10		3/8/11		3/8/11	
	Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		NT	NT	NT	NT	NT	NT	NT	NT
1,2-Dichloroethane		NT	NT	NT	NT	NT	NT	NT	NT
cis-1,2- Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. NT = Not Tested.
7. The samples collected after January 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-11
Chemical Testing Results - Pre- and Post-EPEM Indoor Air
35-37 Knowlton Street
Somerville, Massachusetts

	Sample Location:	35-37 Knowlton Pre-EPEM					
	Sample Name:	37 KNOWLTON-B		35KNOW-1		35KNOW-B	
	Sample Date:	1/23/07		3/5/09		3/5/09	
	Units:	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv
Analyte	**Method**						
Volatile Organic Compounds (VOCs)	TO-15						
Carbon tetrachloride		0.69 J	0.11 J	< 1.3	< 0.20	< 1.3	< 0.20
1,1-Dichloroethane		7.3	1.8	< 0.81	< 0.20	1.9	0.48
1,1-Dichloroethylene		6.7	1.7	< 0.79	< 0.20	2.5	0.63
cis-1,2-Dichloroethylene		3.4	0.86	< 0.79	< 0.20	0.56 J	0.14 J
Tetrachloroethylene (PCE)		163	24.0	4.1	0.60	71.2	10.5
1,1,1-Trichloroethane (TCA)		2.0	0.37	< 1.1	< 0.20	0.60 J	0.11 J
Trichloroethylene (TCE)		20	3.8	< 1.1	< 0.20	7.5	1.4

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. The samples collected after September 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-11

Chemical Testing Results - Pre- and Post-EPEM Indoor Air

35-37 Knowlton Street
Somerville, Massachusetts

	Sample Location:	35-37 Knowlton Street Pre-EPEM (continued)							
	Sample Name:	35KNOW-1		35KNOW-B		35KNOW-1		35KNOW-B	
	Sample Date:	9/1/09		9/1/09		12/3/09		12/3/09	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	1.7	0.43
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	3.0	0.76
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.81	< 0.20	0.52 J	0.13 J
Tetrachloroethylene (PCE)		1.1	0.20	< 1.1	< 0.20	< 1.4	< 0.20	71.2	10.5
1,1,1-Trichloroethane (TCA)		< 1.4	< 0.20	17	2.5	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	1.5	0.27	< 1.1	< 0.20	8.1	1.5

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. The samples collected after September 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-11
Chemical Testing Results - Pre- and Post-EPEM Indoor Air
35-37 Knowlton Street
Somerville, Massachusetts

	Sample Location:	35-37 Knowlton Street Post-EPEM							
	Sample Name:	35KNOW-1		35KNOW-B		35KNOW-1		35KNOW-B	
	Sample Date:	3/2/10		3/2/10		3/11/11		3/11/11	
	Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. The samples collected after September 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-12
Chemical Testing Results - Pre- and Post-EPEM Indoor Air
10 Morton Street
Somerville, Massachusetts

	Sample Location:	10 Morton Street Pre-EPEM					
	Sample Name:	10MORT 1		10MORT B		10MORT-1	
	Sample Date:	8/10/07		8/10/07		11/12/07	
	Units:	μg/m³	ppbv	μg/m³	ppbv	μg/m³	ppbv
Analyte	**Method**						
Volatile Organic Compounds (VOCs)	TO-15						
Carbon tetrachloride		0.63 J	0.10 J	< 1.3	< 0.20	0.69 J	0.11 J
Tetrachloroethylene (PCE)		< 1.4	< 0.20	2.2	0.33	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	4.3	0.79	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. μg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. NT = Not Tested.
7. The samples collected after April 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-12
Chemical Testing Results - Pre- and Post-EPEM Indoor Air
10 Morton Street
Somerville, Massachusetts

	Sample Location:	10 Morton Street pre-EPEM (continued)					
	Sample Name:	10MORT-B		10MORT-1		10MORT-B	
	Sample Date:	11/12/07		2/21/08		2/21/08	
	Units:	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv
Analyte	**Method**						
Volatile Organic Compounds (VOCs)	TO-15						
Carbon tetrachloride		0.62 J	0.099 J	0.63 J	0.10 J	< 1.3	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	2.2	0.32	12	1.8
1,1,1-Trichloroethane (TCA)		0.60 J	0.11 J	< 1.1	< 0.20	0.47 J	0.087 J
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. μg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. NT = Not Tested.
7. The samples collected after April 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-12
Chemical Testing Results - Pre- and Post-EPEM Indoor Air

10 Morton Street
Somerville, Massachusetts

	Sample Location:	**10 Morton Street Post-EPEM**					
	Sample Name:	**10MORT-1**		**10MORT-B**		**10MORT-1**	
	Sample Date:	**4/3/09**		**4/3/09**		**2/12/10**	
	Units:	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**
Analyte	**Method**						
Volatile Organic Compounds (VOCs)	TO-15						
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. NT = Not Tested.
7. The samples collected after April 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-12
Chemical Testing Results - Pre- and Post-EPEM Indoor Air
10 Morton Street
Somerville, Massachusetts

	Sample Location:	10 Morton Street Post-EPEM (continued)					
	Sample Name:	10MORT-B		10MORT-1		10MORT-B	
	Sample Date:	2/12/10		11/13/10		11/13/10	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	**Method**						
Volatile Organic Compounds (VOCs)	TO-15						
Carbon tetrachloride		< 1.3	< 0.20	NT	NT	NT	NT
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	2.9	0.54	13	2.4

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. NT = Not Tested.
7. The samples collected after April 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-12
Chemical Testing Results - Pre- and Post-EPEM Indoor Air
10 Morton Street
Somerville, Massachusetts

	Sample Location:	**10 Morton Street Post-EPEM (continued)**							
	Sample Name:	**10MORT-1**		**10MORT-B**		**10MORT-1**		**10MORT-B**	
	Sample Date:	**12/18/10**		**12/18/10**		**3/5/11**		**3/5/11**	
	Units:	**μg/m^3**	**ppbv**	**μg/m^3**	**ppbv**	**μg/m^3**	**ppbv**	**μg/m^3**	**ppbv**
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		NT	NT	NT	NT	NT	NT	NT	NT
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	1.4	0.26	< 1.1	< 0.20	2.4	0.45

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. μg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. NT = Not Tested.
7. The samples collected after April 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-13
Chemical Testing Results - Post-SSDS Indoor Air
18 Morton Street
Somerville, Massachusetts

	Sample Location:	18 Morton Street					
	Sample Name:	18MORT-B		18MORT-B		18MORT-B	
	Sample Date:	7/24/07		11/5/07		2/4/08	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	**Method**						
Volatile Organic Compounds (VOCs)	TO-15						
Carbon tetrachloride		< 1.3	< 0.20	0.60 J	0.095 J	< 1.3	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Tetrachloroethylene (PCE)		1.4	0.20	< 1.4	< 0.20	< 1.4	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. The samples collected in January 2009 (18MORT-1A and 1B, and 18MORT-B1 and B2) were field duplicates.
7. The samples collected after January 2009 were collected over a 24-hour period ending on the date shown.
8. "**No pre-EPEM indoor air samples were collected. The EPEM was installed based on sub-slab soil vapor testing results.**

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-13

Chemical Testing Results - Post-SSDS Indoor Air

18 Morton Street

Somerville, Massachusetts

	Sample Location:	18 Morton Street (continued)					
	Sample Name:	18MORT-1A		18MORT-1B		18MORT-B1	
	Sample Date:	1/17/09		1/17/09		1/17/09	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	Method						
Volatile Organic Compounds (VOCs)	TO-15						
Carbon tetrachloride		0.69 J	0.11 J	0.69 J	0.11 J	< 1.3	< 0.20
1,2-Dichloroethane		0.73 J	0.18 J	0.73 J	0.18 J	< 0.81	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. The samples collected in January 2009 (18MORT-1A and 1B, and 18MORT-B1 and B2) were field duplicates.
7. The samples collected after January 2009 were collected over a 24-hour period ending on the date shown.
8. "**No pre-EPEM indoor air samples were collected. The EPEM was installed based on sub-slab soil vapor testing results.**

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-13

Chemical Testing Results - Post-SSDS Indoor Air

18 Morton Street
Somerville, Massachusetts

	Sample Location:	**18 Morton Street (continued)**					
	Sample Name:	**18MORT-B2**		**18MORT-B**		**18MORT-B**	
	Sample Date:	**1/17/09**		**3/11/10**		**2/24/11**	
	Units:	**$\mu g/m^3$**	**ppbv**	**$\mu g/m^3$**	**ppbv**	**$\mu g/m^3$**	**ppbv**
Analyte	**Method**						
Volatile Organic Compounds (VOCs)	TO-15						
Carbon tetrachloride		0.61 J	0.097 J	< 1.3	< 0.20	< 1.3	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	1.5	0.28	< 1.1	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	2.8	0.41	1.5	0.22

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. The samples collected in January 2009 (18MORT-1A and 1B, and 18MORT-B1 and B2) were field duplicates.
7. The samples collected after January 2009 were collected over a 24-hour period ending on the date shown.
8. "**No pre-EPEM indoor air samples were collected. The EPEM was installed based on sub-slab soil vapor testing results.**

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-14

Chemical Testing Results - Pre- and Post-EPEM Indoor Air

19-19A Morton Street
Somerville, Massachusetts

	Location Name:	**19-19A Morton Street Pre-EPEM**							
	Sample Name:	**19MORT-1**		**19MORT-B**		**19MORT-1**		**19MORT-B**	
	Sample Date:	**7/2/07**		**7/2/07**		**4/4/08**		**4/4/08**	
	Units:	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	0.69 J	0.11 J
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	0.68 J	0.10 J

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. NT = Not Tested.
7. The samples collected after January 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-14
Chemical Testing Results - Pre- and Post-EPEM Indoor Air
19-19A Morton Street
Somerville, Massachusetts

	Location Name:	19-19A Morton Street Pre-EPEM (continued)							
	Sample Name:	19MORT-1		19MORT-B		19MORT-1		19MORT-B	
	Sample Date:	8/18/08		8/18/08		1/13/09		1/13/09	
	Units:	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		0.88 J	0.14 J	0.69 J	0.11 J	0.63 J	0.10 J	< 1.3	< 0.20
1,2-Dichloroethane		4.9	1.2	0.73 J	0.18 J	< 0.81	< 0.20	< 0.81	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	6.0	0.89	8.8	1.3

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. NT = Not Tested.
7. The samples collected after January 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-14
Chemical Testing Results - Pre- and Post-EPEM Indoor Air
19-19A Morton Street
Somerville, Massachusetts

	Location Name:	**19-19A Morton Street Post-EPEM**							
	Sample Name:	**19MORT-1**		**19MORT-B**		**19MORT-1**		**19MORT-B**	
	Sample Date:	**9/3/09**		**9/3/09**		**1/29/10**		**1/29/10**	
	Units:	**μg/m³**	**ppbv**	**μg/m³**	**ppbv**	**μg/m³**	**ppbv**	**μg/m³**	**ppbv**
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. NT = Not Tested.
7. The samples collected after January 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-14
Chemical Testing Results - Pre- and Post-EPEM Indoor Air
19-19A Morton Street
Somerville, Massachusetts

	Location Name:	19-19A Morton Street Post-EPEM (continued)							
	Sample Name:	19MORT-1		19MORT-B		19MORT-1		19MORT-B	
	Sample Date:	12/7/10		12/7/10		4/10/11		4/10/11	
	Units:	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		NT	NT	NT	NT	NT	NT	NT	NT
1,2-Dichloroethane		NT	NT	NT	NT	NT	NT	NT	NT
Tetrachloroethylene (PCE)		3.1	0.45	4.8	0.71	< 1.4	< 0.20	2.2	0.33

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. μg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. NT = Not Tested.
7. The samples collected after January 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-15
Chemical Testing Results - Pre- and Post-EPEM Indoor Air
27 Tufts Street
Somerville, Massachusetts

	Sample Location:	27 Tufts Street Pre-EPEM							
	Sample Name:	IA-9 (1)		IA-10 (B)		27TUFTS-1		27TUFTS-B	
	Sample Date:	2/23/05		2/23/05		3/23/06		3/23/06	
	Collected By:	Shaw		Shaw		GEI		GEI	
	Units:	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20
Chloromethane		1.2	0.59	0.6	0.29	110 G	53.5 G	2.9 G	1.4 G
Methylene chloride		0.52 J	0.15 J	0.49 J	0.14 J	2.0 J+	0.59 J+	4.2 J+	1.2 J+
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. μg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.

6 NT = Not tested.

7. Samples ending with -1 and -1(2), -B and -B(2), -1A and -1B, and -B1 and -B2 are field duplicates of each other.
8. Samples from 2005 were collected by Shaw Environmental, Inc.
9. * = Improper duplicate precision, this sampling was repeated on September 26, 2008.
10. The samples collected after March 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Notes:

G The result is estimated due to duplicate precision outside control limits.

J The reported result is below the laboratory reporting limit and is estimated.

J+ The reported result is estimated.

Table 3-15

Chemical Testing Results - Pre- and Post-EPEM Indoor Air

27 Tufts Street
Somerville, Massachusetts

	Sample Location:	27 Tufts Street Pre-EPEM (continued)							
	Sample Name:	27 TUFTS-1		27 TUFTS-B		27TUFTS-1		27TUFTS-B	
	Sample Date:	6/28/06		6/28/06		8/3/06		8/3/06	
	Collected By:	GEI		GEI		GEI		GEI	
	Units:	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		< 1.3	< 0.20	0.69 J	0.11 J	< 1.3	< 0.20	< 1.3	< 0.20
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20
Chloromethane		1.6	0.79	1.3	0.65	NT	NT	NT	NT
Methylene chloride		2.2 J+	0.63 J+	2.1 J+	0.60 J+	NT	NT	NT	NT
Tetrachloroethylene (PCE)		3.8	0.56	117	17.3	0.81 J	< 0.12 J	1.6	0.23
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	1.0 J	0.19 J	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6 NT = Not tested.
7. Samples ending with -1 and -1(2), -B and -B(2), -1A and -1B, and -B1 and -B2 are field duplicates of each other.
8. Samples from 2005 were collected by Shaw Environmental, Inc.
9. * = Improper duplicate precision, this sampling was repeated on September 26, 2008.
10. The samples collected after March 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Notes:

G The result is estimated due to duplicate precision outside control limits.
J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.

Table 3-15

Chemical Testing Results - Pre- and Post-EPEM Indoor Air

27 Tufts Street

Somerville, Massachusetts

	Sample Location:	27 Tufts Street Pre-EPEM (continued)							
	Sample Name:	27TUFTS-1		27TUFTS-B		27 TUFTS-1		27 TUFTS-B	
	Sample Date:	9/28/06		9/28/06		12/18/06		12/18/06	
	Collected By:	GEI		GEI		GEI		GEI	
	Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	0.60 J	0.096 J	0.75 J	0.12 J
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20	1.8	0.70
Chloromethane		NT	NT	NT	NT	NT	NT	NT	NT
Methylene chloride		NT	NT	NT	NT	NT	NT	NT	NT
Tetrachloroethylene (PCE)		12	1.8	38	5.6	4.9	0.72	37	5.5
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	0.55 J	0.10 J	< 1.1	< 0.20	0.38 J	0.069 J
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	0.45 J	0.083 J

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6 NT = Not tested.
7. Samples ending with -1 and -1(2), -B and -B(2), -1A and -1B, and -B1 and -B2 are field duplicates of each other.
8. Samples from 2005 were collected by Shaw Environmental, Inc.
9. * = Improper duplicate precision, this sampling was repeated on September 26, 2008.
10. The samples collected after March 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Notes:

G The result is estimated due to duplicate precision outside control limits.

J The reported result is below the laboratory reporting limit and is estimated.

J+ The reported result is estimated.

Table 3-15

Chemical Testing Results - Pre- and Post-EPEM Indoor Air

27 Tufts Street
Somerville, Massachusetts

	Sample Location:	27 Tufts Street Pre-EPEM (continued)							
	Sample Name:	27TUFT-1*		27 TUFT-1(2)*		27TUFT-B*		27 TUFT-B(2)*	
	Sample Date:	9/8/08		9/8/08		9/8/08		9/8/08	
	Collected By:	GEI		GEI		GEI		GEI	
	Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Analyte	Method								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20
Chloromethane		NT	NT	NT	NT	NT	NT	NT	NT
Methylene chloride		NT	NT	NT	NT	NT	NT	NT	NT
Tetrachloroethylene (PCE)		114	16.8	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		5.1	0.95	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6 NT = Not tested.
7. Samples ending with -1 and -1(2), -B and -B(2), -1A and -1B, and -B1 and -B2 are field duplicates of each other.
8. Samples from 2005 were collected by Shaw Environmental, Inc.
9. * = Improper duplicate precision, this sampling was repeated on September 26, 2008.
10. The samples collected after March 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Notes:

G The result is estimated due to duplicate precision outside control limits.

J The reported result is below the laboratory reporting limit and is estimated.

J+ The reported result is estimated.

Table 3-15
Chemical Testing Results - Pre- and Post-EPEM Indoor Air
27 Tufts Street
Somerville, Massachusetts

	Sample Location:	**27 Tufts Street Pre-EPEM (continued)**							
	Sample Name:	**27TUFT-1**		**27 TUFT-1(2)**		**27TUFT-B**		**27 TUFT-B(2)**	
	Sample Date:	**9/26/08**		**9/26/08**		**9/26/08**		**9/26/08**	
	Collected By:	**GEI**		**GEI**		**GEI**		**GEI**	
	Units:	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20
Chloromethane		NT	NT	NT	NT	NT	NT	NT	NT
Methylene chloride		NT	NT	NT	NT	NT	NT	NT	NT
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6 NT = Not tested.
7. Samples ending with -1 and -1(2), -B and -B(2), -1A and -1B, and -B1 and -B2 are field duplicates of each other.
8. Samples from 2005 were collected by Shaw Environmental, Inc.
9. * = Improper duplicate precision, this sampling was repeated on September 26, 2008.
10. The samples collected after March 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Notes:

G The result is estimated due to duplicate precision outside control limits.

J The reported result is below the laboratory reporting limit and is estimated.

J+ The reported result is estimated.

Table 3-15

Chemical Testing Results - Pre- and Post-EPEM Indoor Air

27 Tufts Street
Somerville, Massachusetts

	Sample Location:	27 Tufts Street Pre-EPEM (continued)							
	Sample Name:	27TUFT-1A		27 TUFT-1B		27TUFT-B1		27 TUFT-B2	
	Sample Date:	2/4/09		2/4/09		2/4/09		2/4/09	
	Collected By:	GEI		GEI		GEI		GEI	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		0.58 J	0.092 J	< 1.3	< 0.20	< 1.3	< 0.20	0.61 J	0.097 J
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20
Chloromethane		NT	NT	NT	NT	NT	NT	NT	NT
Methylene chloride		NT	NT	NT	NT	NT	NT	NT	NT
Tetrachloroethylene (PCE)		24	3.5	24	3.6	2.9	0.43	3.1	0.45
1,1,1-Trichloroethane (TCA)		1.4	0.25	1.6	0.29	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		0.48 J	0.089 J	0.54 J	0.10 J	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6 NT = Not tested.
7. Samples ending with -1 and -1(2), -B and -B(2), -1A and -1B, and -B1 and -B2 are field duplicates of each other.
8. Samples from 2005 were collected by Shaw Environmental, Inc.
9. * = Improper duplicate precision, this sampling was repeated on September 26, 2008.
10. The samples collected after March 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Notes:

G The result is estimated due to duplicate precision outside control limits.
J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.

Table 3-15
Chemical Testing Results - Pre- and Post-EPEM Indoor Air
27 Tufts Street
Somerville, Massachusetts

	Sample Location:	27 Tufts Street Post-EPEM							
	Sample Name:	27TUFT-1		27 TUFT-B		27TUFT-1		27 TUFT-B	
	Sample Date:	2/25/09		2/25/09		3/4/09		3/4/09	
	Collected By:	GEI		GEI		GEI		GEI	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20
Chloromethane		NT	NT	NT	NT	NT	NT	NT	NT
Methylene chloride		NT	NT	NT	NT	NT	NT	NT	NT
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6 NT = Not tested.
7. Samples ending with -1 and -1(2), -B and -B(2), -1A and -1B, and -B1 and -B2 are field duplicates of each other.
8. Samples from 2005 were collected by Shaw Environmental, Inc.
9. * = Improper duplicate precision, this sampling was repeated on September 26, 2008.
10. The samples collected after March 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Notes:

G The result is estimated due to duplicate precision outside control limits.
J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.

Table 3-15

Chemical Testing Results - Pre- and Post-EPEM Indoor Air

27 Tufts Street

Somerville, Massachusetts

	Sample Location:	27 Tufts Street Post-EPEM (continued)											
	Sample Name:	27TUFT-1		27 TUFT-B		27TUFT-1		27 TUFT-B		27TUFT-1		27 TUFT-B	
	Sample Date:	8/25/09		8/25/09		2/23/11		2/23/11		6/15/11		6/15/11	
	Collected By:	GEI		GEI		GEI		GEI		GEI		GEI	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	**Method**												
Volatile Organic Compounds (VOCs)	TO-15												
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	NT	NT	NT	NT	NT	NT	NT	NT
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20	NT	NT	NT	NT	NT	NT	NT	NT
Chloromethane		NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Methylene chloride		NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Tetrachloroethylene (PCE)		1.3 J	0.19 J	1.8	0.26	12	1.8	2.1	0.31	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6 NT = Not tested.
7. Samples ending with -1 and -1(2), -B and -B(2), -1A and -1B, and -B1 and -B2 are field duplicates of each other.
8. Samples from 2005 were collected by Shaw Environmental, Inc.
9. * = Improper duplicate precision, this sampling was repeated on September 26, 2008.
10. The samples collected after March 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Notes:

G The result is estimated due to duplicate precision outside control limits.

J The reported result is below the laboratory reporting limit and is estimated.

J+ The reported result is estimated.

Table 3-16
Chemical Testing Results - Pre- and Post- EPEM Indoor Air
60 Tufts Street, Units #1, #4, #5, #10 and #16
Somerville, Massachusetts

	Pre- or Post EPEM:	**Pre-EPEM Testing**							
	Sample Location:	**60 Tufts Street, Unit 4**							
	Sample Name:	**60TUFTS-UNIT 4**		**60TUFTS-UNIT 4B**		**60TUFTS-UNIT 4-1**		**60TUFTS-UNIT 4B**	
	Sample Date:	**1/23/07**		**1/23/07**		**2/20/08**		**2/20/08**	
	Collected By:	**GEI**		**GEI**		**GEI**		**GEI**	
	Units:	**$\mu g/m^3$**	**ppbv**	**$\mu g/m^3$**	**ppbv**	**$\mu g/m^3$**	**ppbv**	**$\mu g/m^3$**	**ppbv**
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		0.75 J	0.12 J	0.63 J	0.10 J	< 1.3	< 0.20	< 1.3	< 0.20
Dichloroethane,1,2-		< 0.81	< 0.20	< 0.81	< 0.20	0.97	0.24	< 0.81	< 0.20
Tetrachloroethylene (PCE)		5.8	0.85	4.4	0.65	2.4	0.36	2.0	0.29
1,1,1-Trichloroethane (TCA)		11	2.1	14	2.6	1.5	0.27	1.9	0.35
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6 NT = Not tested.
7. The samples collected after June 2009 were collected over a 24-hour period ending on the date shown.
8. The results for the sample collected in Unit 1 in February 2010 are not considered to be site-related, and are not representative of the EPEM performance.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-16
Chemical Testing Results - Pre- and Post- EPEM Indoor Air
60 Tufts Street, Units #1, #4, #5, #10 and #16
Somerville, Massachusetts

	Pre- or Post EPEM:	Pre-EPEM Testing					
	Sample Location:	60 Tufts Street, Unit 10		60 Tufts Street, Unit 16		60 Tufts Street, Unit 5	
	Sample Name:	60TUFT-UNIT 10		60TUFT-UNIT 16		60TUFT-UNIT 5	
	Sample Date:	3/6/08		3/6/08		3/5/09	
	Collected By:	GEI		GEI		GEI	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	**Method**						
Volatile Organic Compounds (VOCs)	TO-15						
Carbon tetrachloride		0.61 J	0.097 J	< 1.3	< 0.20	< 1.3	< 0.20
Dichloroethane,1,2-		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
Tetrachloroethylene (PCE)		1.9	0.28	< 1.4	< 0.20	0.64 J	0.094 J
1,1,1-Trichloroethane (TCA)		0.82 J	0.15 J	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6 NT = Not tested.
7. The samples collected after June 2009 were collected over a 24-hour period ending on the date shown.
8. The results for the sample collected in Unit 1 in February 2010 are not considered to be site-related, and are not representative of the EPEM performance.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-16
Chemical Testing Results - Pre- and Post- EPEM Indoor Air
60 Tufts Street, Units #1, #4, #5, #10 and #16
Somerville, Massachusetts

	Pre- or Post EPEM:	**Post-EPEM Testing**							
	Sample Location:	**60 Tufts, Unit 1**							
	Sample Name:	**60TUFTU1-1**		**60TUFTU1-1**		**60TUFTU1-1**		**60TUFTU1-1**	
	Sample Date:	**5/27/09**		**3/3/10**		**9/19/10**		**2/5/11**	
	Collected By:	**GEI**		**GEI**		**GEI**		**GEI**	
	Units:	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	NT	NT	NT	NT
Dichloroethane,1,2-		< 0.81	< 0.20	< 0.81	< 0.20	NT	NT	NT	NT
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.

6 NT = Not tested.

7. The samples collected after June 2009 were collected over a 24-hour period ending on the date shown.
8. The results for the sample collected in Unit 1 in February 2010 are not considered to be site-related, and are not representative of the EPEM performance.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-16
Chemical Testing Results - Pre- and Post- EPEM Indoor Air
60 Tufts Street, Units #1, #4, #5, #10 and #16
Somerville, Massachusetts

	Pre- or Post EPEM:	**Post-EPEM Testing**			
	Sample Location:	**60 Tufts, Hall outside Unit 1**			
	Sample Name:	**60TUFTHALL-A**		**60TUFTHALL-A**	
	Sample Date:	**4/20/10**		**4/20/10**	
	Collected By:	**GEI**		**GEI**	
	Units:	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**
Analyte	**Method**				
Volatile Organic Compounds (VOCs)	TO-15				
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20
Dichloroethane,1,2-		< 0.81	< 0.20	< 0.81	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.

6 NT = Not tested.

7. The samples collected after June 2009 were collected over a 24-hour period ending on the date shown.
8. The results for the sample collected in Unit 1 in February 2010 are not considered to be site-related, and are not representative of the EPEM performance.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-16

Chemical Testing Results - Pre- and Post- EPEM Indoor Air

60 Tufts Street, Units #1, #4, #5, #10 and #16
Somerville, Massachusetts

	Pre- or Post EPEM:	Post-EPEM Testing							
	Sample Location:	60 Tufts Street, Unit 4							
	Sample Name:	60TUFTU4-1		60TUFTU4-B		60TUFTU4-1		60TUFTU4-B	
	Sample Date:	5/27/09		5/27/09		6/22/09		6/22/09	
	Collected By:	GEI		GEI		GEI		GEI	
	Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20
Dichloroethane,1,2-		3.2	0.80	< 0.81	< 0.20	2.8	0.70	< 0.81	< 0.20
Tetrachloroethylene (PCE)		1.4	0.20	1.0 J	0.15 J	0.95 J	0.14 J	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	0.75 J	0.14 J

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6 NT = Not tested.
7. The samples collected after June 2009 were collected over a 24-hour period ending on the date shown.
8. The results for the sample collected in Unit 1 in February 2010 are not considered to be site-related, and are not representative of the EPEM performance.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-16

Chemical Testing Results - Pre- and Post- EPEM Indoor Air

60 Tufts Street, Units #1, #4, #5, #10 and #16

Somerville, Massachusetts

	Pre- or Post EPEM:	Post-EPEM Testing							
	Sample Location:	60 Tufts Street, Unit 4 (continued)							
	Sample Name:	60TUFTU4-1		60TUFTU4-B		60TUFTU4-1		60TUFTU4-B	
	Sample Date:	2/24/10		2/24/10		9/19/10		9/19/10	
	Collected By:	GEI		GEI		GEI		GEI	
	Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	NT	NT	NT	NT
Dichloroethane,1,2-		< 0.81	< 0.20	< 0.81	< 0.20	NT	NT	NT	NT
Tetrachloroethylene (PCE)		5.8	0.86	5.2	0.76	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		2.1	0.39	1.9	0.35	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6 NT = Not tested.
7. The samples collected after June 2009 were collected over a 24-hour period ending on the date shown.
8. The results for the sample collected in Unit 1 in February 2010 are not considered to be site-related, and are not representative of the EPEM performance.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-16
Chemical Testing Results - Pre- and Post- EPEM Indoor Air
60 Tufts Street, Units #1, #4, #5, #10 and #16
Somerville, Massachusetts

	Pre- or Post EPEM:	**Post-EPEM Testing**			
	Sample Location:	**60 Tufts Street, Unit 4 (continued)**			
	Sample Name:	**60TUFTU4-1**		**60TUFTU4-B**	
	Sample Date:	**2/5/11**		**2/5/11**	
	Collected By:	**GEI**		**GEI**	
	Units:	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**
Analyte	**Method**				
Volatile Organic Compounds (VOCs)	TO-15				
Carbon tetrachloride		NT	NT	NT	NT
Dichloroethane,1,2-		NT	NT	NT	NT
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6 NT = Not tested.
7. The samples collected after June 2009 were collected over a 24-hour period ending on the date shown.
8. The results for the sample collected in Unit 1 in February 2010 are not considered to be site-related, and are not representative of the EPEM performance.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-16
Chemical Testing Results - Pre- and Post- EPEM Indoor Air
60 Tufts Street, Units #1, #4, #5, #10 and #16
Somerville, Massachusetts

	Pre- or Post EPEM:	**Post-EPEM Testing**					
	Sample Location:	**60 Tufts Street, Unit 5**					
	Sample Name:	**60TUFTU5-1**		**60TUFTU5-1**		**60TUFTU5-1**	
	Sample Date:	**5/27/09**		**2/24/10**		**4/20/10**	
	Collected By:	**GEI**		**GEI**		**GEI**	
	Units:	**$\mu g/m^3$**	**ppbv**	**$\mu g/m^3$**	**ppbv**	**$\mu g/m^3$**	**ppbv**
Analyte	**Method**						
Volatile Organic Compounds (VOCs)	TO-15						
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20
Dichloroethane,1,2-		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	49	7.2	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	17	3.2	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6 NT = Not tested.
7. The samples collected after June 2009 were collected over a 24-hour period ending on the date shown.
8. The results for the sample collected in Unit 1 in February 2010 are not considered to be site-related, and are not representative of the EPEM performance.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-16
Chemical Testing Results - Pre- and Post- EPEM Indoor Air
60 Tufts Street, Units #1, #4, #5, #10 and #16
Somerville, Massachusetts

	Pre- or Post EPEM:	**Post-EPEM Testing**				**Post-EPEM Testing**			
	Sample Location:	**60 Tufts Street, Unit 5 (continued)**				**60 Tufts, Unit 10**		**60 Tufts, Unit 16**	
	Sample Name:	**60TUFTU5-1**		**60TUFTU5-1**		**60TUFTU10-1**		**60TUFTU16-1**	
	Sample Date:	**9/21/10**		**3/8/11**		**5/27/09**		**6/5/09**	
	Collected By:	**GEI**		**GEI**		**GEI**		**GEI**	
	Units:	**$\mu g/m^3$**	**ppbv**	**$\mu g/m^3$**	**ppbv**	**$\mu g/m^3$**	**ppbv**	**$\mu g/m^3$**	**ppbv**
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		NT	NT	NT	NT	< 1.3	< 0.20	< 1.3	< 0.20
Dichloroethane,1,2-		NT	NT	NT	NT	< 0.81	< 0.20	< 0.81	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	1.0 J	0.15 J	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6 NT = Not tested.
7. The samples collected after June 2009 were collected over a 24-hour period ending on the date shown.
8. The results for the sample collected in Unit 1 in February 2010 are not considered to be site-related, and are not representative of the EPEM performance.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table 3-17

Chemical Testing Results - Indoor Air

117 Washington Street
Somerville, Massachusetts

	Sample Location:	117 Washington Street					
	Sample Name:	117WASH-1		117WASH-B		117WASH-1	
	Sample Date:	9/15/09		9/15/09		3/9/11	
	Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Analyte	**Method**						
Volatile Organic Compounds (VOCs)	TO-15						
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	1.5	0.22

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. The sample collected in March 2011 was collected over a 24-hour period ending on the date shown.

Table 3-18
Chemical Testing Results - Indoor and Outdoor Air
Capuano Center
150 Glen Street
Somerville, Massachusetts

	Sample Location:	Cafetorium		Room 101				Room 108				Room 121	
	Sample ID:	150 GLEN-CAF		150 GLEN-ROOM 101A		150 GLEN-ROOM 101B		150 GLEN-ROOM 108A		150 GLEN-ROOM 108B		150 GLEN-ROOM 121	
	Sample Date:	1/6/07		12/27/06		12/28/06		12/27/06		12/28/06		1/6/07	
	Units:	μg/m³	ppbv	μg/m³	ppbv	μg/m³	ppbv	μg/m³	ppbv	μg/m³	ppbv	μg/m³	ppbv
Analyte	Method												
Volatile Organic Compounds (VOCs)	TO-15												
Carbon tetrachloride		0.49 J J+	0.078 J J+	< 1.3	< 0.20	< 1.3	< 0.20	0.94 J	0.15 J	< 1.3	< 0.20	0.52 J J+	0.082 J J+
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
1,1,2,2-Tetrachloroethane		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Tetrachloroethylene (PCE)		0.88 J J+	0.13 J J+	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

	Sample Location:	Room 122				Room 125				Room 126							
	Sample ID:	150 GLEN-ROOM 122		150 GLEN-RM 122		150 GLEN-ROOM 125A		150 GLEN-ROOM 125B		150 GLEN-ROOM 126		150 GLEN-ROOM 100 (FD-Room 126)		150 GLEN-RM 126		150GLEN-ROOM 126	
	Sample Date:	1/6/07		2/7/07		12/27/06		12/28/06		1/13/07		1/13/07		2/7/07		3/8/07	
	Units:	μg/m³	ppbv	μg/m³	ppbv	μg/m³	ppbv	μg/m³	ppbv	μg/m³	ppbv	μg/m³	ppbv	μg/m³	ppbv	μg/m³	ppbv
Analyte	Method																
Volatile Organic Compounds (VOCs)	TO-15																
Carbon tetrachloride		0.51 J	0.081 J J+	0.69 J	0.11 J	1.0 J	0.16 J	< 1.3	< 0.20	0.69 J	0.11 J	0.63 J	0.10 J	0.94 J	0.15 J	< 1.3	< 0.20
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
1,1,2,2-Tetrachloroethane		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	0.88 J	0.13 J	0.75 J	0.11 J	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. μg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. FD = Field Duplicate.
6. NT = Not Tested.
7. The samples collected in August 2009, November 2009, February 2010, November 2010, and March 2011 were collected over a 24-hour period.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.

Table 3-18
Chemical Testing Results - Indoor and Outdoor Air
Capuano Center
150 Glen Street
Somerville, Massachusetts

	Sample Location:	Room 126 (continued)													
	Sample ID:	150 GLEN-ROOM 126		150 GLEN-RM 126		150GLEN-RM126		150GLEN-RM126		150GLEN-RM126		150GLEN-RM126		150GLEN-RM126	
	Sample Date:	4/20/07		5/17/07		7/30/07		9/10/07		10/8/07		10/14/07		11/15/07	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	Method														
Volatile Organic Compounds (VOCs)	TO-15														
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	0.60 J	0.095 J	0.69 J	0.11 J	0.82 J	0.13 J	< 1.3	< 0.20	0.69 J	0.11 J
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
1,1,2,2-Tetrachloroethane		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	1.0 J	0.15 J	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

	Sample Location:	Room 126 (continued)													
	Sample ID:	150GLEN-RM126		150GLEN-RM126		150GLEN-RM126		150GLEN-RM126		150GLEN-RM126		150GLEN-RM126		150GLEN-RM126	
	Sample Date:	12/13/07		1/21/08		2/19/08		2/22/08		3/172008		4/21/08		8/18/08	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	Method														
Volatile Organic Compounds (VOCs)	TO-15														
Carbon tetrachloride		0.59 J	0.093 J	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	0.69 J	0.11 J	0.60 J	0.096 J
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
1,1,2,2-Tetrachloroethane		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. FD = Field Duplicate.
6. NT = Not Tested.
7. The samples collected in August 2009, November 2009, February 2010, November 2010, and March 2011 were collected over a 24-hour period.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.

Table 3-18
Chemical Testing Results - Indoor and Outdoor Air
Capuano Center
150 Glen Street
Somerville, Massachusetts

	Sample Location:	Room 126 (continued)														Room 134				Room 136		Room 137			
	Sample ID:	150GLEN-RM126		150GLEN-RM126		150GLEN-RM126		150GLEN-RM126		150GLEN-RM126		150GLEN-RM126		150GLEN-RM126		150 GLEN-ROOM 134		150 GLEN-RM 134		150 GLEN-ROOM 136		150 GLEN-ROOM 137A		150 GLEN-ROOM 137B	
	Sample Date:	11/24/08		3/2/09		8/27/09		11/11/09		2/19/10		11/11/10		3/17/11		1/13/07		2/7/07		1/13/07		1/6/07		1/6/07	
Analyte	Method / Units:	μg/m³	ppbv	μg/m³	ppbv	μg/m³	ppbv	μg/m³	ppbv	μg/m³	ppbv	μg/m³	ppbv	μg/m³	ppbv	μg/m³	ppbv	μg/m³	ppbv	μg/m³	ppbv	μg/m³	ppbv	μg/m³	ppbv
Volatile Organic Compounds (VOCs)	TO-15																								
Carbon tetrachloride		0.60 J	0.096 J	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	NT	NT	NT	NT	0.75 J	0.12 J	0.94 J	0.15 J	0.69 J	0.11 J	0.52 J J+	0.082 J J+	< 1.3	< 0.20
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.53	< 0.13	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	NT	NT	NT	NT	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.52	< 0.13	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.37	< 0.094	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
1,1,2,2-Tetrachloroethane		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	1.2 J	0.18 J	< 1.4	< 0.20	< 1.4	< 0.20	< 0.82	< 0.12	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 0.95	< 0.14	3.2	0.47	< 1.4	< 0.20	2.1	0.31	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 0.76	< 0.14	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 0.70	< 0.13	0.54 J	0.10 J	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. μg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. FD = Field Duplicate.
6. NT = Not Tested.
7. The samples collected in August 2009, November 2009, February 2010, November 2010, and March 2011 were collected over a 24-hour period.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.

Table 3-18
Chemical Testing Results - Indoor and Outdoor Air
Capuano Center
150 Glen Street
Somerville, Massachusetts

	Sample Location:	Room 138													
	Sample ID:	RM138		150 GLEN-ROOM 138		150 GLEN-ROOM 138		150 GLEN-ROOM 138		150 GLEN-ROOM 138 (Alpha duplicate)		150 GLEN-RM 138		150 GLEN-RM 139 (FD-Room 138)	
	Sample Date:	1/2/07		1/6/07		1/13/07		1/26/07		1/26/07		2/7/07		2/7/07	
Analyte	Units: / **Method**	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Volatile Organic Compounds (VOCs)	TO-15														
Carbon tetrachloride		< 1.3	< 0.20	0.49 J J+	0.078 J J+	0.82 J	0.13 J	0.82 J	0.13 J	< 0.126	< 0.020	0.75 J	0.12 J	0.52 J	0.082 J
1,1-Dichloroethane		0.45 J	0.11 J	0.77 J J+	0.19 J J+	0.57 J	0.14 J	0.65 J	0.16 J	< 0.081	< 0.020	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.079	< 0.020	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	2.1 J+	0.54 J+	< 0.79	< 0.20	< 0.79	< 0.20	< 0.079	< 0.020	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	0.83 J+	0.21 J+	< 0.79	< 0.20	< 0.79	< 0.20	< 0.0819	< 0.020	< 0.79	< 0.20	< 0.79	< 0.20
1,1,2,2-Tetrachloroethane		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Tetrachloroethylene (PCE)		14	2.0	60 J+	8.8 J+	20	3.0	20	3.0	32.6	4.8	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 0.109	< 0.020	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		2.3	0.42	7 J+	1.3 J+	3.1	0.57	3.3	0.61	4.26	0.794	< 1.1	< 0.20	< 1.1	< 0.20

	Sample Location:	Room 138													
	Sample ID:	150GLEN-ROOM 138		150GLEN-ROOM 139 (FD-Room 138)		150 GLEN-ROOM 138		150GLEN-ROOM 139 (FD-Room 138)		150 GLEN-RM 138		150GLEN-ROOM 139 (FD-Room 138)		150GLEN-RM138	
	Sample Date:	3/8/07		3/8/07		4/20/07		4/20/07		5/17/07		5/17/07		7/30/07	
Analyte	Units: / **Method**	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Volatile Organic Compounds (VOCs)	TO-15														
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	0.61 J	0.097 J
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
1,1,2,2-Tetrachloroethane		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4 J+	< 0.20 J+
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	1.2 J	0.17 J
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. FD = Field Duplicate.
6. NT = Not Tested.
7. The samples collected in August 2009, November 2009, February 2010, November 2010, and March 2011 were collected over a 24-hour period.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.

Table 3-18
Chemical Testing Results - Indoor and Outdoor Air
Capuano Center
150 Glen Street
Somerville, Massachusetts

	Sample Location:	Room 138 (continued)													
	Sample ID:	150GLEN-ROOM 139 (FD-Room 138)		150GLEN-RM138		150GLEN-ROOM 139 (FD-Room 138)		150GLEN-RM138		150GLEN-RM139 (FD-Room 138)		150GLEN-RM239 (FD-Room 138)		150GLEN-RM238 (FD-Room 138)	
	Sample Date:	7/30/07		9/10/07		9/10/07		10/8/07		10/8/07		10/8/07		10/8/07	
Analyte	**Method** / Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Volatile Organic Compounds (VOCs)	TO-15														
Carbon tetrachloride		0.69 J	0.11 J	0.69 J	0.11 J	0.69 J	0.11 J	0.69 J	0.11 J	0.88 J	0.14 J	0.82 J	0.13 J	< 1.3	< 0.20
1,1-Dichloroethane		< 0.81 J+	< 0.20 J+	< 0.81 J+	< 0.20 J+	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81 J+	< 0.20 J+	< 0.81 J+	< 0.20 J+	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79 J+	< 0.20 J+	< 0.79 J+	< 0.20 J+	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79 J+	< 0.20 J+	< 0.79 J+	< 0.20 J+	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
1,1,2,2-Tetrachloroethane		< 1.4 J+	< 0.20 J+	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Tetrachloroethylene (PCE)		1.1 J	0.16 J	< 1.4 J+	< 0.20 J+	6.5	0.96	< 1.4	< 0.20	1.5	0.22	1.2 J	0.18 J	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1 J+	< 0.20 J+	< 1.1 J+	< 0.20 J+	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1 J+	< 0.20 J+	< 1.1 J+	< 0.20 J+	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

	Sample Location:	Room 138 (continued)													
	Sample ID:	150GLEN-RM138		150GLEN-ROOM 139 (FD-Room 138)		150GLEN-RM238 (FD-Room 138)		150GLEN-RM239 (FD-Room 138)		150GLEN-RM138		150GLEN-RM139 (FD-Room 138)		150GLEN-RM138	
	Sample Date:	10/14/07		10/14/07		10/14/07		10/14/07		11/15/07		11/15/07		12/13/07	
Analyte	**Method** / Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Volatile Organic Compounds (VOCs)	TO-15														
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	0.59 J	0.094 J	0.62 J	0.099 J	0.69 J	0.11 J	0.69 J	0.11 J	0.57 J	0.091 J
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
1,1,2,2-Tetrachloroethane		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. FD = Field Duplicate.
6. NT = Not Tested.
7. The samples collected in August 2009, November 2009, February 2010, November 2010, and March 2011 were collected over a 24-hour period.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.

Table 3-18

Chemical Testing Results - Indoor and Outdoor Air

Capuano Center
150 Glen Street
Somerville, Massachusetts

	Sample Location:	Room 138 (continued)													
	Sample ID:	150GLEN-RM139 (FD-Room 138)		150GLEN-RM138		150GLEN-RM139 (FD-Room 138)		150GLEN-RM138		150GLEN-RM139 (FD-Room 138)		150GLEN-RM138		150GLEN-RM139 (FD-Room 138)	
	Sample Date:	12/13/07		1/21/08		1/21/08		2/19/08		2/19/08		2/22/08		2/22/08	
Analyte	**Method** Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Volatile Organic Compounds (VOCs)	TO-15														
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	0.69 J	0.11 J	< 1.3	< 0.20
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
1,1,2,2-Tetrachloroethane		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	1.8	0.27	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

	Sample Location:	Room 138 (continued)													
	Sample ID:	150GLEN-RM138		150GLEN-RM139 (FD-Room 138)		150GLEN-RM138		150GLEN-RM139 (FD-Room 138)		150GLEN-RM138		150GLEN-RM139 (FD-Room 138)		150GLEN-RM138	
	Sample Date:	3/17/08		3/17/08		4/21/08		4/21/08		8/18/08		8/18/08		11/24/08	
Analyte	**Method** Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Volatile Organic Compounds (VOCs)	TO-15														
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	0.75 J	0.12 J	0.69 J	0.11 J	0.69 J	0.11 J	0.63 J	0.10 J	0.62 J	0.098 J
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
1,1,2,2-Tetrachloroethane		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. FD = Field Duplicate.
6. NT = Not Tested.
7. The samples collected in August 2009, November 2009, February 2010, November 2010, and March 2011 were collected over a 24-hour period.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.

Table 3-18
Chemical Testing Results - Indoor and Outdoor Air
Capuano Center
150 Glen Street
Somerville, Massachusetts

	Sample Location:	Room 138 (continued)																									
	Sample ID:	150GLEN-RM139 (FD-Room 138)		150GLEN-RM138		150GLEN-RM139 (FD-Room 138)		150GLEN-RM138		150GLEN-RM139 (FD-Room 138)		150GLEN-RM138		150GLEN-RM139 (FD-Room 138)		150GLEN-RM138		150GLEN-RM139 (FD-Room 138)		150GLEN-RM138		150GLEN-RM139 (FD-Room 138)		150GLEN-RM138		150GLEN-RM139 (FD-Room 138)	
	Sample Date:	11/24/08		3/2/09		3/2/09		8/27/09		8/27/09		11/11/09		11/11/09		2/19/10		2/19/10		11/11/10		11/11/10		3/17/11		3/17/11	
Analyte	Method / Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Volatile Organic Compounds (VOCs)	TO-15																										
Carbon tetrachloride		0.63 J	0.10 J	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	NT	NT	NT	NT	NT	NT	NT	NT
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.53	< 0.13	< 0.53	< 0.13
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	NT	NT	NT	NT	NT	NT	NT	NT
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.52	< 0.13	< 0.52	< 0.13
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.37	< 0.094	< 0.37	< 0.094
1,1,2,2-Tetrachloroethane		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 0.82	< 0.12	< 0.82	< 0.12
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 0.95	< 0.14	< 0.95	< 0.14
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 0.76	< 0.14	< 0.76	< 0.14
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 0.70	< 0.13	< 0.70	< 0.13

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. FD = Field Duplicate.
6. NT = Not Tested.
7. The samples collected in August 2009, November 2009, February 2010, November 2010, and March 2011 were collected over a 24-hour period.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.

Table 3-18
Chemical Testing Results - Indoor and Outdoor Air
Capuano Center
150 Glen Street
Somerville, Massachusetts

	Sample Location:	Room 141																											
	Sample ID:	150 GLEN-ROOM 141		150GLEN-ROOM 141		150 GLEN-ROOM 141		150 GLEN-RM 141		150GLEN-RM141		150GLEN-RM141		150GLEN-RM141		150GLEN-RM141		150GLEN-RM141		150GLEN-RM141		150GLEN-RM141		150GLEN-RM141		150GLEN-RM141		150GLEN-RM141	
	Sample Date:	1/6/07		3/8/07		4/20/07		5/17/07		7/30/07		9/10/07		10/8/07		10/14/07		11/15/07		12/13/07		1/21/08		2/19/08		2/22/08		3/17/08	
	Units:	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv
Analyte	**Method**																												
Volatile Organic Compounds (VOCs)	TO-15																												
Carbon tetrachloride		0.45 J J+	0.071 J J+	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3 J+	< 0.20 J+	0.75 J	0.12 J	< 1.3	< 0.20	< 1.3	< 0.20	0.69 J	0.11 J	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	0.69 J	0.11 J	< 1.3	< 0.20
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81 J+	< 0.20 J+	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81 J+	< 0.20 J+	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79 J+	< 0.20 J+	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79 J+	< 0.20 J+	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
1,1,2,2-Tetrachloroethane		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4 J+	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4 J+	< 0.20 J+	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1 J+	< 0.20 J+	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1 J+	< 0.20 J+	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. μg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. FD = Field Duplicate.
6. NT = Not Tested.
7. The samples collected in August 2009, November 2009, February 2010, November 2010, and March 2011 were collected over a 24-hour period.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.

Table 3-18
Chemical Testing Results - Indoor and Outdoor Air
Capuano Center
150 Glen Street
Somerville, Massachusetts

	Sample Location:	Room 141 (continued)															
	Sample ID:	150GLEN-RM141		150GLEN-RM141		150GLEN-RM141		150GLEN-RM141		150GLEN-RM141		150GLEN-RM141		150GLEN-RM141		150GLEN-RM141	
	Sample Date:	4/21/08		8/18/08		11/24/08		3/2/09		8/27/09		2/19/10		11/11/10		3/17/11	
Analyte	**Method** / **Units:**	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Volatile Organic Compounds (VOCs)	TO-15																
Carbon tetrachloride		0.69 J	0.11 J	0.60 J	0.096 J	0.63 J	0.10 J	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	NT	NT	NT	NT
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.53	< 0.13
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	NT	NT	NT	NT
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.52	< 0.13
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.37	< 0.094
1,1,2,2-Tetrachloroethane		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 0.82	< 0.12
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 0.95	< 0.14
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 0.76	< 0.14
Trichloroethylene (TCE)		< 1.1	< 0.20	0.62 J	0.092 J	0.62 J	0.092 J	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 0.70	< 0.13

	Sample Location:	Room 142											
	Sample ID:	RM142		150 GLEN-ROOM 142		150 GLEN-RM 142		150GLEN-ROOM 142		150 GLEN-ROOM 142		150 GLEN-RM 142	
	Sample Date:	1/2/07		1/6/07		2/7/07		3/8/07		4/20/07		5/17/07	
Analyte	**Method** / **Units:**	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Volatile Organic Compounds (VOCs)	TO-15												
Carbon tetrachloride		< 1.3	< 0.20	0.52 J J+	0.083 J J+	0.82 J	0.13 J	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20
1,1-Dichloroethane		1.4	0.35	1.2 J+	0.29 J+	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		0.87	0.22	2.5 J+	0.63 J+	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
1,1,2,2-Tetrachloroethane		< 1.4	< 0.20	< 1.4 J+	< 0.20 J+	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Tetrachloroethylene (PCE)		28	4.1	45 J+	6.6 J+	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	0.33 J J+	0.061 J J+	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		3.7	0.69	5.4 J+	1 J+	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. FD = Field Duplicate.
6. NT = Not Tested.
7. The samples collected in August 2009, November 2009, February 2010, November 2010, and March 2011 were collected over a 24-hour period.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.

Table 3-18
Chemical Testing Results - Indoor and Outdoor Air
Capuano Center
150 Glen Street
Somerville, Massachusetts

	Sample Location:	Room 142 (continued)																											
	Sample ID:	150GLEN-RM142		150GLEN-RM142		150GLEN-RM142		150GLEN-RM142		150GLEN-RM142		150GLEN-RM142		150GLEN-RM142		150GLEN-RM142		150GLEN-RM142		150GLEN-RM142		150GLEN-RM142		150GLEN-RM142		150GLEN-RM142		150GLEN-RM142	
	Sample Date:	7/30/07		9/10/07		10/8/07		10/14/07		11/15/07		12/13/07		1/21/08		2/19/08		2/22/08		3/17/08		4/21/08		8/18/08		11/24/08		3/2/09	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	**Method**																												
Volatile Organic Compounds (VOCs)	TO-15																												
Carbon tetrachloride		0.63 J	0.10 J	0.75 J	0.12 J	< 1.3	< 0.20	< 1.3	< 0.20	0.69 J	0.11 J	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	0.75 J	0.12 J	< 1.3	< 0.20	0.69 J	0.11 J	< 1.3	< 0.20	0.69 J	0.11 J	< 1.3	< 0.20
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		1.0	0.25	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
1,1,2,2-Tetrachloroethane		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. FD = Field Duplicate.
6. NT = Not Tested.
7. The samples collected in August 2009, November 2009, February 2010, November 2010, and March 2011 were collected over a 24-hour period.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.

Table 3-18
Chemical Testing Results - Indoor and Outdoor Air
Capuano Center
150 Glen Street
Somerville, Massachusetts

	Sample Location:	**Room 142 (continued)**										**Room 144**				**Room 145**	
	Sample ID:	**150GLEN-RM142**		**150GLEN-RM142**		**150GLEN-RM142**		**150GLEN-RM142**		**150GLEN-RM142**		**150 GLEN-ROOM 144**		**150 GLEN-ROOM 144 (Alpha duplicate)**		**150 GLEN-ROOM 145**	
	Sample Date:	8/27/09		11/11/09		2/19/10		11/11/10		3/17/11		1/13/07		1/13/07		1/6/07	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	Method																
Volatile Organic Compounds (VOCs)	TO-15																
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	NT	NT	NT	NT	0.88 J	0.14 J	< 3.14	< 0.50	0.45 J J+	0.071 J J+
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.53	< 0.13	< 0.81	< 0.20	< 2.02	< 0.50	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	NT	NT	NT	NT	< 0.81	< 0.20	< 1.98	< 0.50	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.52	< 0.13	< 0.79	< 0.20	< 1.98	< 0.50	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.37	< 0.094	< 0.79	< 0.20	< 2.02	< 0.50	< 0.79	< 0.20
1,1,2,2-Tetrachloroethane		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 0.82	< 0.12	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 0.95	< 0.14	4.1	0.61	4.36	0.643	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 0.76	< 0.14	< 1.1	< 0.20	< 2.72	< 0.50	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 0.70	< 0.13	1.3	0.24	< 2.68	< 0.50	< 1.1	< 0.20

	Sample Location:	**Room 146**											
	Sample ID:	**150 GLEN-ROOM 146A**		**150 GLEN-ROOM 146B**		**150 GLEN-ROOM 146B (FD-Room 146)**		**RM146**		**150 GLEN-ROOM 146**		**150 GLEN-RM 146**	
	Sample Date:	12/27/06		12/28/06		12/28/06		1/2/07		1/6/07		2/7/07	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	Method												
Volatile Organic Compounds (VOCs)	TO-15												
Carbon tetrachloride		1.1 J	0.18 J	< 1.3	< 0.20	0.49 J	0.078 J	0.63 J	0.10 J	< 1.3	< 0.20	0.75 J	0.12 J
1,1-Dichloroethane		10	2.5	3.6	0.88	3.3	0.82	0.53 J	0.13 J	0.57 J J+	0.14 J J+	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		7.9	2.0	4.0	1.0	3.9	0.99	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		3.3	0.83	1.3	0.33	1.2	0.31	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
1,1,2,2-Tetrachloroethane		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Tetrachloroethylene (PCE)		186	27.5	83.4	12.3	85.4	12.6	11	1.6	26 J+	3.8 J+	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		2.1	0.38	0.82 J	0.15 J	0.71 J	0.13 J	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		37	6.8	10	1.9	11	2.1	1.7	0.32	3.0 J+	0.56 J+	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. FD = Field Duplicate.
6. NT = Not Tested.
7. The samples collected in August 2009, November 2009, February 2010, November 2010, and March 2011 were collected over a 24-hour period.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.

Table 3-18
Chemical Testing Results - Indoor and Outdoor Air
Capuano Center
150 Glen Street
Somerville, Massachusetts

	Sample Location:	**Room 146 (continued)**													
	Sample ID:	**150GLEN-ROOM 146**		**150 GLEN-ROOM 146**		**150 GLEN-RM 146**		**150GLEN-RM146**		**150GLEN-RM146**		**150GLEN-RM146**		**150GLEN-RM146**	
	Sample Date:	**3/8/07**		**4/20/07**		**5/17/07**		**7/30/07**		**9/10/07**		**10/8/07**		**10/14/07**	
	Units:	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**
Analyte	**Method**														
Volatile Organic Compounds (VOCs)	TO-15														
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	0.62 J	0.099 J	0.82 J	0.13 J	< 1.3	< 0.20	0.58 J	0.092 J
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81 J+	< 0.20 J+	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81 J+	< 0.20 J+	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79 J+	< 0.20 J+	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 2.0	< 0.50	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79 J+	< 0.20 J+	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
1,1,2,2-Tetrachloroethane		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4 +	< 0.20 J+	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	1.0 J	0.15 J	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1 J+	< 0.20 J+	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1 J+	< 0.20 J+	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

	Sample Location:	**Room 146 (continued)**													
	Sample ID:	**150GLEN-RM146**		**150GLEN-RM146**		**150GLEN-RM146**		**150GLEN-RM146**		**150GLEN-RM146**		**150GLEN-RM146**		**150GLEN-RM146**	
	Sample Date:	**11/15/07**		**12/13/07**		**1/21/08**		**2/19/08**		**2/22/08**		**3/17/08**		**4/21/08**	
	Units:	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**
Analyte	**Method**														
Volatile Organic Compounds (VOCs)	TO-15														
Carbon tetrachloride		0.69 J	0.11 J	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	0.62 J	0.098 J	< 1.3	< 0.20	0.75 J	0.12 J
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
1,1,2,2-Tetrachloroethane		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. FD = Field Duplicate.
6. NT = Not Tested.
7. The samples collected in August 2009, November 2009, February 2010, November 2010, and March 2011 were collected over a 24-hour period.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.

Table 3-18

Chemical Testing Results - Indoor and Outdoor Air

Capuano Center
150 Glen Street
Somerville, Massachusetts

	Sample Location:	Room 146 (continued)																Outside of School by Room 126 Window						Outside of School by Day Care Window					
	Sample ID:	150GLEN-RM146		150GLEN-RM146		150GLEN-RM146		150GLEN-RM146		150GLEN-RM146		150GLEN-RM146		150GLEN-RM146		150GLEN-RM146		150 GLEN-0-1A		150 GLEN-0-1B		150 GLEN-0-1A		150 GLEN-0-2A		150 GLEN-0-2B		150 GLEN-0-2A	
	Sample Date:	8/18/08		11/24/08		3/2/09		8/27/09		11/11/09		2/19/10		11/11/10		3/17/11		12/27/06		12/28/06		1/6/07		12/27/06		12/28/06		1/6/07	
	Units:	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv	μg/m^3	ppbv
Analyte	Method																												
Volatile Organic Compounds (VOCs)	TO-15																												
Carbon tetrachloride		0.60 J	0.096 J	0.63 J	0.10 J	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	NT	NT	NT	NT	< 1.3	< 0.20	< 1.3	< 0.20	0.52 J J+	0.083 J J+	1.1 J	0.17 J	< 1.3	< 0.20	0.52 J J+	0.082 J J+
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.53	< 0.13	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		0.49 J	0.12 J	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	NT	NT	NT	NT	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.52	< 0.13	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.37	< 0.094	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
1,1,2,2-Tetrachloroethane		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 0.82	< 0.12	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 0.95	< 0.14	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	0.93 J	0.17 J	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 0.76	< 0.14	< 1.2	< 0.21	< 1.2	< 0.21	< 1.2	< 0.21	< 1.2	< 0.21	< 1.2	< 0.21	< 1.2	< 0.21
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 0.70	< 0.13	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. μg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. FD = Field Duplicate.
6. NT = Not Tested.
7. The samples collected in August 2009, November 2009, February 2010, November 2010, and March 2011 were collected over a 24-hour period.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.

Table 3-18
Chemical Testing Results - Indoor and Outdoor Air
Capuano Center
150 Glen Street
Somerville, Massachusetts

	Sample Location:	**Downwind on Roof**																	
	Sample ID:	**150 GLEN-ROOF B**		**150 GLEN-ROOF B**		**150GLEN-ROOF**		**150 GLEN-ROOF**		**150 GLEN-ROOF**		**150GLEN-ROOF**		**150GLEN-ROOF**		**150GLEN-ROOF**		**150GLEN-ROOF**	
	Sample Date:	**2/8/07**		**2/8/07**		**3/8/07**		**4/20/07**		**5/17/07**		**8/9/07**		**9/10/07**		**10/14/07**		**11/14/07**	
	Units:	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**
Analyte	**Method**																		
Volatile Organic Compounds (VOCs)	TO-15																		
Carbon tetrachloride		< 1.3	< 1.3	< 0.20	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	0.69 J	0.11 J	< 1.3	< 0.20	< 1.3	< 0.20
1,1-Dichloroethane		< 0.81	< 0.81	< 0.20	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.81	< 0.20	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.79	< 0.20	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.79	< 0.20	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
1,1,2,2-Tetrachloroethane		< 1.4	< 1.4	< 0.20	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 1.4	< 0.20	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	1.2 J	0.18 J	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.2	< 1.2	< 0.21	< 0.21	< 1.2	< 0.21	< 1.2	< 0.21	< 1.2	< 0.21	< 1.2	< 0.21	< 1.2	< 0.21	< 1.2	< 0.21	< 1.2	< 0.21
Trichloroethylene (TCE)		< 1.1	< 1.1	< 0.20	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. FD = Field Duplicate.
6. NT = Not Tested.
7. The samples collected in August 2009, November 2009, February 2010, November 2010, and March 2011 were collected over a 24-hour period.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.

Table 3-18

Chemical Testing Results - Indoor and Outdoor Air

Capuano Center
150 Glen Street
Somerville, Massachusetts

	Sample Location:	Downwind on Roof (continued)																	
	Sample ID:	150GLEN-ROOF		150GLEN-ROOF		150GLEN-ROOF		150GLEN-ROOF		150GLEN-ROOF		150GLEN-ROOF		150GLEN-ROOF		150GLEN-ROOF		150GLEN-ROOF	
	Sample Date:	12/17/07		1/21/08		2/19/08		3/17/08		4/21/08		8/18/08		11/24/08		8/27/09		11/11/09	
	Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Analyte	Method																		
Volatile Organic Compounds (VOCs)	TO-15																		
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	0.69 J	0.11 J	0.63 J	0.10 J	0.63 J	0.10 J	< 1.3	< 0.20	< 1.3	< 0.20
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
1,1,2,2-Tetrachloroethane		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.2	< 0.21	< 1.2	< 0.21	< 1.2	< 0.21	< 1.2	< 0.21	< 1.2	< 0.21	< 1.2	< 0.21	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. FD = Field Duplicate.
6. NT = Not Tested.
7. The samples collected in August 2009, November 2009, February 2010, November 2010, and March 2011 were collected over a 24-hour period.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.
J+ The reported result is estimated.

Table 3-19
Summary of Meteorological Data During Air Sampling Events
Residential, Commercial Properties, and Capuano Center
Somerville, Massachusetts

Sample Location	Sample Date	Sample Location	Inside Temperature (°F)[1,3]		Inside Barometric Pressure (in. Hg)[2,4]		Outside Temperature (°F)[1,3]		Outside Barometric Pressure (in. Hg)[2,4]		Prevailing Wind Direction		General Weather Conditions		Significant precipitation within 12 hours prior to Sampling?
			Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	
Residences															
91-93 Franklin Street	02/01/11	B	52.8	53.7	30.81	30.22	19.8	21.2	30.81	30.22	NE	Calm	Snow	Sleet	Yes
		1	68.5	70.5	30.81	30.22									
95 Franklin Street	06/23/11	B	NM	NM	NM	NM	63	64	29.86	29.86	NE	NE	Overcast	Overcast	Yes
		1	NM	NM	NM	NM									
	03/10/11	B	58.1	62.7	30.41	29.79	39	44.1	30.48	29.86	SE	SE	Overcast	Fog	Yes
		1	71.0	70.0	30.46	29.78									
	01/05/11	B	59.3	59.5	29.7	29.7	27.9	22.5	29.7	29.7	Calm	W	Sunny	Sunny	No
		1	71.4	71.2	29.7	29.7									
162-164 Glen Street	02/04/11	B	57.9	56	NM	NM	33.1	30	30.04	30.04	SW	SW	Partly Cloudy	Partly Cloudy	No
		1	64	68	NM	NM									
166-168 Glen Street	02/03/11	B	52.8	52.1	30.62	30.21	19.8	15.9	30.62	30.21	Calm	Calm	Snow	Sunny	Yes
		1	73	71.6	30.62	30.21									
13 Knowlton Street	01/31/11	B	69	62	30.46	30.44	19.7	17.6	30.46	30.44	NW	N	Sunny	Snow	No
		1	71.6	65	30.46	30.44									
17 Knowlton Street	02/26/11	B	61.7	63.1	30.08	29.95	30.9	32	30.12	29.98	NW	N	Mostly Cloudy	Snow	Yes
		1	71.6	70.2	30.09	29.96									
32 Knowlton Street	03/07/11	B	62.2	61.8	29.41	30.53	54	28	29.42	30.48	SW	NW	Light Rain	Partly Cloudy	Yes
		1	68	67.8	29.40	30.50									
35-37 Knowlton Street	03/10/11	B	66.5	65	30.39	29.76	39	44.6	30.47	29.84	SE	E	Overcast	Rain	Yes
		1	69.2	72	30.38	29.75									
10 Morton Street	03/04/11	B	59	61	30.75	30.47	25	43	30.79	31.47	Calm	Calm	Partly Cloudy	Overcast	No
		1	72.8	71	30.75	30.47									
	12/17/10	B	59.3	60.2	29.82	30.06	25.1	26.1	29.82	30.06	W	NE	Sunny	Partly Cloudy	No
		1	64.9	72.1	29.82	30.06									
18 Morton Street	02/23/11	B	59.3	56.4	30.19	30.05	37	37.9	30.24	30.09	NW	SW	Clear	Mostly Cloudy	No

General Notes:

1. °F = degrees Fahrenheit.
2. in. Hg = inches of mercury.
3. Temperatures were measured in the field using a hand-held thermometer.
4. Barometric pressures were measured in the field with an Ambient Weather digital barometer model number WS-108.
5. Samples were typically collected from the basement (B) and the first floor (1) of each building. A basement-only sample was collected at 18 Morton Street. First floor-only samples were collected at 60 Tufts Street Units 1 and 5 and the Capuano Center.

Table 3-19

Summary of Meteorological Data During Air Sampling Events

Residential, Commercial Properties, and Capuano Center

Somerville, Massachusetts

Sample Location	Sample Date	Sample Location	Inside Temperature (°F)[1,3]		Inside Barometric Pressure (in. Hg)[2,4]		Outside Temperature (°F)[1,3]		Outside Barometric Pressure (in. Hg)[2,4]		Prevailing Wind Direction		General Weather Conditions		Significant precipitation within 12 hours prior to Sampling?
			Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	
Residences															
19-19A Morton Street	04/09/11	B	59.9	61.3	30.16	30.12	50.5	55.4	30.12	30.14	Calm	SE	Sunny	Sunny, Breezy	No
		1	61.5	63.6	30.12	30.1									
27 Tufts Street	06/15/11	B	67.4	70.1	29.72	29.77	70.1	76.6	29.71	29.76	SE	W	Sunny	Sunny	Yes
		1	68.1	72.3	29.71	29.76									
27 Tufts Street	02/23/11	B	60.8	62.6	NM	30.18	28.9	34	30.26	30.25	NW	SE	Sunny	Sunny	No
		1	68.1	66.3	NM	30.18									
60 Tufts Street - #1	02/04/11	1	68.3	67.8	30.21	30.51	15.9	25.9	30.21	30.51	Calm	Calm	Sunny	Cloudy	Yes
60 Tufts Street - #4		B	61.7	62.9	30.21	30.51									
		1	69.2	70.3	30.21	30.51									
60 Tufts Street - #5	03/07/11	1	76.1	74.8	30.6	30.8	54	27	29.42	30.43	SW	Calm	Light Rain	Sunny	Yes
117 Washington Street	03/08/11	1	35	36	30.47	31.23	35	36	30.54	31.23	Calm	E	Sunny	Overcast	No
Capuano Center															
150 Glen Street	3/16/2011	Rm126	73.2	75	29.91	30.01	44.1	61	29.98	30.06	NW	Varied	Rain	Partly Sunny	Yes
		Rm138	75	78	29.90	29.97									
		Rm141	70.3	74.1	29.90	29.97									
		Rm142	73.5	77.7	29.90	29.97									
		Rm146	73.4	77	29.91	29.97									

General Notes:

1. °F = degrees Fahrenheit.
2. in. Hg = inches of mercury.
3. Temperatures were measured in the field using a hand-held thermometer.
4. Barometric pressures were measured in the field with an Ambient Weather digital barometer model number WS-108.
5. Samples were typically collected from the basement (B) and the first floor (1) of each building. A basement-only sample was collected at 18 Morton Street. First floor-only samples were collected at 60 Tufts Street Units 1 and 5 and the Capuano Center.

Table 4-1
Summary of SSDS Monitoring Events - Capuano Center
50 Tufts Street
Somerville, Massachusetts

Monitoring Date	Monitoring Event per RMR Report Period	Type of Monitoring Event	SSDS Field Parameters Measured	Analytical Samples Collected (Yes/No)?
12/30/2011	1	SSDS Monthly Monitoring	-Pressure readings and VOC concentrations at each manifold pipe, the combined influent, and effluent pipes. -System flow rate.	No
1/24/2011	2	SSDS Monthly Monitoring	-Pressure readings and VOC concentrations at each manifold pipe, the combined influent, and effluent pipes. -System flow rate.	No
2/11/2011	3	SSDS Monthly Monitoring	-Pressure readings and VOC concentrations at each manifold pipe, the combined influent, and effluent pipes.	No
3/16/2011	4	SSDS Semi-Annual Air Monitoring	-Pre-sampling HVAC inspection.	Yes
3/17/2011	5	SSDS Monthly Monitoring	-Pressure readings and VOC concentrations at each manifold pipe, the combined influent, and effluent pipes. -Pressure readings and VOC concentrations at all the exterior extraction pipes. -Pressure readings and VOC concentrations at all interior sub-slab points.	No
4/25/2011	6	SSDS Monthly Monitoring	-Pressure readings and VOC concentrations at each manifold pipe, the combined influent, and effluent pipes. -System flow rate.	No
5/31/2011	7	SSDS Monthly Monitoring	-Pressure readings and VOC concentrations at each manifold pipe, the combined influent, and effluent pipes. -System flow rate.	No
6/13/2011	8	SSDS Monthly Monitoring	-Pressure readings and VOC concentrations at each manifold pipe, the combined influent, and effluent pipes. -Pressure readings and VOC concentrations at select the exterior extraction pipes. -System flow rate.	No

General Notes:

1. SSDS = Sub-Slab Depressurization System.
2. RMR = Remedial Monitoring Report.
3. VOC = Volatile Organic Compound.
4. HVAC = Heating, Ventilation, and Air Conditioning system.
5. VOC measurements collected with a ppb-RAE calibrated to 10 parts per million (ppm) isobutylene, or a Phocheck 5000+ calibrated to 100 ppm.
6. Pressure readings collected using a Dwyer 475-000-FM manometer.

Table 5-1
Exposure Pathway Elimination Measure (EPEM) Status
50 Tufts Street
Somerville, Massachusetts

				Construction Details									
Property Address	EPEM Design Option	Date Completed or Last Modified	Date of Last Indoor Air Monitoring	Ventilation Fan(s) (Model No.) [(a)]	Number of Sub-Slab Vapor Extraction Points (SSDS)	Sub-slab Vapor Barrier - HDPE Liner	Sub-Slab Ventilation System - Geocomposite	Sub-Slab Vapor Trench	Foundation Wall Ventilation System - Geocomposite	New Basement Slab Installed	Crawlspace Vapor Barrier	Epoxy Vapor Barrier - Floor	Epoxy Vapor Barrier - Foundation Walls
91-93 Franklin Street	3	March, 2009	2/2/2011	-	-	Yes	Yes	-	-	Yes	-	Yes	Yes
95 Franklin Street	2/1[(b)]	May, 2011	6/23/2011	GP-501	-	-	-	Yes	-	-	Yes	Yes	Yes
95R Franklin Street	2	December, 2007	3/8/2010	-	-	-	-	Yes	Yes	-	Yes	Yes	Yes
150 Glen Street	1	February, 2007	3/17/2011	Regenerative Blower	18	-	-	-	-	-	-	-	-
166-168 Glen Street	3	November, 2010	2/5/2011	-	-	Yes	Yes	-	-	Yes	Yes	Yes	Yes
9 Knowlton Street	1	January, 2010	5/21/2007	GP-501	5	-	-	-	-	-	-	-	-
13 Knowlton Street	1	January, 2010	2/1/2011	GP-501	4	-	-	-	-	-	-	-	-
17 Knowlton Street	3	March, 2009	2/24/2011	-	-	Yes	Yes	-	-	Yes	-	Yes	Yes
31-33 Knowlton Street	1	February, 2008	3/19/2010	HS-5000	7	-	-	-	-	-	-	-	-
32 Knowlton Street	3	May, 2009	3/8/2011	-	-	-	-	-	-	-	-	-	-
35-37 Knowlton Street	3/1[(b)]	April, 2010	3/11/2011	GP-501	-	Yes	Yes	-	-	Yes	-	Yes	Yes
4 Morton Street	3	November, 2008	12/5/2010	-	-	Yes	Yes	-	-	Yes	-	Yes	Yes
10 Morton Street	3	March, 2009	3/5/2011	-	-	Yes	Yes	-	-	Yes	-	Yes	Yes
11 Morton Street	2	November, 2008	2/23/2010	-	-	-	-	Yes	Yes	-	-	Yes	Yes
12 Morton Street	3	March, 2008	11/19/2010	-	-	Yes	Yes	-	-	Yes	-	Yes	Yes
13 Morton Street	1	October, 2008	1/28/2010	GP-501	5	-	-	-	-	-	-	-	-
18 Morton Street	1	July, 2007	2/24/2011	GP-501	5	-	-	-	-	-	-	-	-
19-19A Morton Street	3	August, 2009	4/10/2011	-	-	-	-	-	-	-	-	-	-
23 Tufts Street	1	May, 2007	2/25/2010	GP-501	1	-	-	-	-	-	-	-	-
27 Tufts Street	3/1[(b)]	May, 2011	6/15/2011	GP-501	-	Yes	Yes	-	-	Yes	Yes	Yes	Yes
50 Tufts Street	1	August, 2007	3/9/2009	Regenerative Blower	22	-	-	-	-	-	-	Yes	-
60 Tufts Street	1	April, 2009	2/5/2011	Regenerative Blower	14	-	-	-	-	-	-	-	-
103 Washington Street	1	July, 2007	NS	GP-501 and GP-201	3	-	-	-	-	-	-	-	-

General Notes:
1. NS = Not sampled.
2. NA = Not Applicable.

Footnotes:

(a) Ventilation fans manufactured by Radon Away.

(b) An Option 2 or 3 EPEM was initially installed at these properties; however, a fan was added to the EPEM to improve performance. Therefore, these EPEMs consist of Option 1 with Option 2 or 3 EPEM elements.

Table 5-2
Proposed Schedule for Indoor Air Sampling and Operation, Monitoring, and Maintenance (OMM)
Residential and Commercial Properties
Somerville, Massachusetts

Property	Property Type	Indoor Air Sampling Rationale		Proposed Indoor Air Sampling / OMM		
			EPEM Design Option	Spring/Summer 2011	Fall 2011	Winter 2012
91-93 Franklin Street	Residential	Post-EPEM evaluation	3			X
95 Franklin Street	Residential	Post-EPEM evaluation	2/1$^{(b)}$	X		X
95R Franklin Street	Residential	NA	2			X
166-168 Glen Street	Residential	Post-EPEM evaluation	3		X	X
9 Knowlton Street[1]	Residential	NA	1			X
13 Knowlton Street	Residential	NA	1			X
17 Knowlton Street	Residential	Post-EPEM evaluation	3			X
31-33 Knowlton Street	Residential	NA	1			X
32 Knowlton Street	Residential	NA	3			X
35-37 Knowlton Street	Residential	NA	3/1$^{(b)}$			X
4 Morton Street	Residential	NA	3	X		X
10 Morton Street	Residential	NA	3			X
11 Morton Street	Residential	NA	2			X
12 Morton Street	Residential	NA	3			X
13 Morton Street	Residential	NA	1			X
18 Morton Street	Residential	NA	1			X
19-19A Morton Street	Residential	Post-EPEM evaluation	3			X
23 Tufts Street	Residential	NA	1			X
27 Tufts Street	Residential	Post-EPEM evaluation	3/1$^{(b)}$	X		X
60 Tufts Street (Unit 1, 4, and 5)	Residential	NA	1			X
103 Washington Street[2]	Commercial	NA	1			X
117 Washington Street	Residential	Vapor intrusion pathway evaluation	--			X

General Notes:

1. Dry cleaning-related chemicals are stored in the basement at 9 Knowlton Street. Because of the potential for measurement of chlorinated VOCs in indoor air that are attributable to these chemicals, indoor air samples are not collected from 9 Knowlton Street.
2. 103 Washington is an auto repair shop. Because of the potential for measurement of chlorinated VOCs in indoor air that are attributable to the business, indoor air samples are not collected from 103 Washington Street.
3. EPEM = Exposure Pathway Elimination Measure.
4. NA = Not Applicable. Sufficient indoor air sampling has been conducted to demonstrate EPEM effectiveness and additional indoor air samples are not required, or indoor air samples are not collected because of a potential indoor source. Annual EPEM inpsections will be conducted.

Footnotes:

(a) An Option 2 or 3 EPEM was initially installed at these properties; however, a fan was added to the EPEM to improve performance. Therefore, these EPEMs consist of Option 1 and Option 2 or 3 EPEM elements.

Table 6-1
Summary of SSDS Monitoring Events - 60 Tufts Street
50 Tufts Street
Somerville, Massachusetts

Monitoring Date	Monitoring Event per RMR Report Period	Type of Monitoring Event	SSDS Field Parameters Measured
1/28/2011	1	SSDS Monthly Monitoring	-Pressure readings and VOC concentrations at system influent/effluent and blower. -System flow rate
2/28/2011	2	SSDS Monthly Monitoring	-Pressure readings and VOC concentrations at system influent/effluent and blower.
3/18/2011	3	SSDS Monthly Monitoring	-Pressure readings and VOC concentrations at system influent/effluent and blower. -System flow rate.
4/1/2011	4	SSDS Monthly Monitoring	-Pressure readings and VOC concentrations at system influent/effluent and blower. -System flow rate
5/2/2011	5	SSDS Monthly Monitoring	-Pressure readings and VOC concentrations at system influent/effluent and blower. -System flow rate.
6/13/2011	6	SSDS Monthly Monitoring	-Pressure readings and VOC concentrations at system influent/effluent and blower. -System flow rate.

General Notes:

1. SSDS = Sub-Slab Depressurization System.
2. RMR = Remedial Monitoring Report.
3. VOC = Volatile Organic Compound.
4. VOC measurements collected with a Thermo 580B or a Phocheck 1000+ calibrated to 100 ppm.
5. Pressure readings collected using a Dwyer 475-000-FM manamoter.

Table 7-1
Summary of SSDS Monitoring Events - 50 Tufts Street
50 Tufts Street
Somerville, Massachusetts

Monitoring Date	Monitoring Event per RMR Report Period	Type of Monitoring Event	SSDS Field Parameters Measured	Analytical Samples Collected (Yes/No)?
12/22/2010	1	Flow Rate Adjustment and Extraction System Monitoring	-Pressure readings, and flow at each header pipe, the combined influent, and effluent pipes before and after flow adjustment. -Pressure readings at carbon tanks before and after flow adjustment. -Pressure readings at all accessible SVT/SVE monitoring points within zone of system influence before and after flow adjustment. -Pressure readings at all interior SSDS monitoring points before and after flow adjustment. -System flow rate before and after flow adjustment.	No
1/5/2011	2	SSDS Monthly Monitoring and Extraction System Monitoring	-Pressure readings and VOC concentrations at each header pipe, the combined influent, and effluent pipes. -Pressure readings and VOC concentrations at carbon tanks, soil vapor points, and extraction points. -Pressure readings and VOC concentrations at accessible SVT/SVE monitoring points within zone of system influence. -Pressure readings and VOC concentrations at all interior SSDS monitoring	No
1/27/2011	3	SSDS Pressure Monitoring	-Pressure and flow readings at each header pipe, the combined influent, and effluent pipes. -Pressure readings and VOC concentrations at carbon tanks.	No
2/28/2011	4	SSDS Monthly Monitoring	-Pressure readings and VOC concentrations at each header pipe, the combined influent, and effluent pipes. -Attempted to remove water in system. -Could not measure VOC concentrations due to water in system and flow problems.	No
3/2/2011	5	SSDS Monthly Monitoring and System Flow Evaluation	-Pressure readings and VOC concentrations at each header pipe, the combined influent, and effluent pipes. -Pressure readings and VOC concentrations at carbon tanks. -System and header flow rates. -Found flow blocked in Tank C.	No
3/18/2011	6	SSDS Monthly Monitoring, Carbon Change-Out, and Blocked Tank Evaluation	-Conducted carbon change-out -Pressure readings and VOC concentrations at each header pipe, the combined influent, and effluent pipes. -Pressure readings and VOC concentrations at carbon tanks. -System flow rate before and after carbon change-out. -Header flow rates after carbon change-out. -Found broken pipe in Tank C.	No
4/5/2011	7	SSDS Monthly Monitoring	-Pressure readings and VOC concentrations at each header pipe, the combined influent, and effluent pipes. -Pressure readings and VOC concentrations at carbon tanks. -System flow rate.	No
5/2/2011	8	SSDS Monthly Monitoring	-Pressure readings and VOC concentrations at each header pipe, the combined influent, and effluent pipes. -Pressure readings and VOC concentrations at carbon tanks. -System flow rate.	No

General Notes:

1. SSDS = Sub-Slab Depressurization System.
2. RMR = Remedial Monitoring Report.
3. VOC = Volatile Organic Compound.
4. SVT/SVE = Soil Vapor Temporary Point/Soil Vapor Extraction.
5. VOC measurements collected with a Thermo 580B or a Phocheck 1000+ calibrated to 100 parts per million (ppm).
6. Pressure readings collected using a Dwyer 475-000-FM manometer.

Table 8-1
Groundwater Elevations
50 Tufts Street
Somerville, Massachusetts

Monitoring Well ID	Well Screen Interval (ft bgs)	Gauging Date: Elevation of Measuring Point (ft NAVD)	5/15/2006		5/16/2006		5/23/2006		5/31/2006		7/24/2006		8/1/2006		8/3/2006		8/16/2006		9/29/2006	
			Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)
MW-1	unknown	25.90	9.69	16.21	9.53	16.37	10.9	15	11.39	14.51	--	--	--	--	--	--	11.9	14	--	--
MW-2	unknown	25.38	8.99	16.39	10.36	15.02	Dry	Dry	Dry	Dry	--	--	--	--	--	--	Dry	Dry	--	--
MW-3	unknown	25.31	8.88	16.43	9.32	15.99	11.16	14.15	12.71	12.6	--	--	--	--	--	--	13.73	11.58	--	--
MW-101	9-19	26.75	--	--	10.56	16.19	11.53	15.22	12.1	14.65	12.33	14.42	12.51	14.24	13.47	13.28	12.78	13.97	12.85	13.9
MW-102	6-16	18.89	--	--	6.62	12.27	6.86	12.03	7.44	11.45	7.93	10.96	8.16	10.73	9.11	9.78	8.51	10.38	8.68	10.21
MW-103	6-16	19.47	--	--	9.5	9.97	10.37	9.1	10.74	8.73	11.15	8.32	11.31	8.16	12.24	7.23	11.72	7.75	11.98	7.49
MW-104	5-15	17.67	--	--	--	--	7.93	9.74	8.89	8.78	9.06	8.61	9.39	8.28	10.29	7.38	9.87	7.8	9.95	7.72
MW-105	19-29	38.84	--	--	19.49	19.35	20.21	18.63	20.7	18.14	21.18	17.66	21.43	17.41	22.41	16.43	21.91	16.93	22.27	16.57
MW-106	9 - 19	26.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-107	2 - 12	14.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-108	2 - 12	12.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-109	3 - 13	24.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-110	3 - 13	15.58	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-111	4 - 14	18.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-112	3 - 10	18.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-112a	4-19	17.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-113	10-20	26.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-114	7-17	29.43	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-115	10-25	27.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-116	5-15	13.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-117S	5 - 20	21.94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-117T	35 - 45	21.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-117D	60 - 70	21.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-118S	3 - 14	15.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-118T	39.5 - 49.5	15.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-118D	70 - 80	15.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-119S	5 - 20	11.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-119T	42 - 47	11.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-120S	5 - 20	12.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-120D	28 - 38	12.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-121S	5 - 20	12.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-121D	32 - 47	12.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-122	4 - 16	16.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GEO-1	5 - 20	25.88	9.69	16.19	9.9	15.98	10.92	14.96	11.36	14.52	--	--	--	--	--	--	11.82	14.06	--	--
GEO-2	5 - 20	26.54	9.76	16.78	--	--	11.38	15.16	11.91	14.63	--	--	--	--	--	--	12.51	14.03	--	--
GEO-3	5 - 20	25.64	10.43	15.21	9.59	16.05	9.87	15.77	10.67	14.97	11.67	13.97	11.85	13.79	12.84	12.8	12.25	13.39	12.37	2.84
GEO-4	4 - 19	21.69	--	--	7.79	13.9	9.85	11.84	10.78	10.91	11.25	10.44	11.45	10.24	12.43	9.26	11.9	9.79	12.09	9.6
GEO-5	5 - 20	20.14	--	--	6.78	13.36	9.08	11.06	9.96	10.18	10.29	9.85	10.56	9.58	11.51	8.63	10.99	9.15	11.21	8.93
GEO-6	5 - 20	17.62	--	--	5.66	11.96	7.39	10.23	8.23	9.39	8.43	9.19	8.73	8.89	9.64	7.98	9.25	8.37	9.41	8.21
SH-1	9 - 14	29.55	10.15	19.4	11.4	18.15	Dry	Dry	Dry	Dry	--	--	--	--	--	--	Dry	Dry	--	--
SH-2	7 - 14	29.64	5.71	23.93	7.86	21.78	12.07	17.57	12.22	17.42	--	--	--	--	--	--	11.98	17.66	--	--
SH-3	8 - 13	29.66	7.54	22.12	8.56	21.1	12.73	16.93	12.96	16.7	--	--	--	--	--	--	Dry	Dry	--	--
SH-4	11 - 16	29.63	13.53	16.1	13.48	16.15	14.48	15.15	15.02	14.61	--	--	--	--	--	--	15.09	14.54	--	--
SH-5	8 - 13	29.63	Dry	Dry	--	--	12.99	16.64	13.03	16.6	--	--	--	--	--	--	Dry	Dry	--	--
SH-MW1	10 - 30	24.02	6.72	17.3	--	--	11.44	12.58	12.18	11.84	--	--	--	--	--	--	13.09	10.93	--	--
SH-MW2	10 - 25	24.27	9.33	14.94	--	--	12.05	12.22	12.69	11.58	--	--	--	--	--	--	13.38	10.89	--	--
SH-MW3	10 - 24	22.31	7.8	14.51	--	--	10.26	12.05	11.03	11.28	--	--	--	--	--	--	13	9.31	--	--
MW201	11-21	27.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW202	10.5-20.5	27.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW203	6-18	21.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

General Notes:
1. ft = feet.
2. bgs = below ground surface.
3. ID = identification.
4 GW = groundwater.
5. NAVD = North American Vertical Datum of 1988.
6. The top of the PVC riser was used as the measuring point for depth to groundwater.
7. "--" = Well not yet installed, abandoned, or not measured.

Table 8-1
Groundwater Elevations
50 Tufts Street
Somerville, Massachusetts

Monitoring Well ID	Well Screen Interval (ft bgs)	Gauging Date: Elevation of Measuring Point (ft NAVD)	10/4/2006		11/14/2006		12/12/2006		1/16/2007		2/12/2007		3/14/2007		4/12/2007		5/29/2007		6/26/2007	
			Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)
MW-1	unknown	25.90	11.88	14.02	--	--	--	--	11.6	14.3	--	--	--	--	11.39	14.51	11.41	14.49	11.8	14.1
MW-2	unknown	25.38	--	--	--	--	--	--	Destroyed	Destroyed	--	--	--	--	--	--	--	--	--	--
MW-3	unknown	25.31	13.75	11.56	--	--	--	--	13.05	12.26	--	--	--	--	12.57	12.74	14.89	10.42	13.6	11.71
MW-101	9-19	26.75	12.76	13.99	12.25	14.5	12.57	14.18	12.4	14.35	12.81	13.94	12.34	14.41	12.11	14.64	12.17	14.58	12.62	14.13
MW-102	6-16	18.89	8.52	10.37	7.64	11.25	8.01	10.88	7.72	11.17	8.52	10.37	--	--	7.46	11.43	6.72	12.17	8.36	10.53
MW-103	6-16	19.47	11.92	7.55	11	8.47	11.21	8.26	10.88	8.59	11.74	7.73	11	8.47	10.66	8.81	10.81	8.66	11.47	8.0
MW-104	5-15	17.67	9.92	7.75	--	--	--	--	8.73	8.94	--	--	--	--	8.75	8.92	--	--	9.62	8.05
MW-105	19-29	38.84	22.18	16.66	21.16	17.68	21.76	17.08	21.46	17.38	22.03	16.81	21.56	17.28	20.88	17.96	20.86	17.98	21.55	17.29
MW-106	9 - 19	26.33	--	--	--	--	--	--	--	--	12.27	14.06	12.91	13.42	11.65	14.68	11.69	14.64	12.07	14.26
MW-107	2 - 12	14.63	--	--	--	--	--	--	--	--	4.54	10.09	4.5	10.13	4.49	10.14	4.46	10.17	4.48	10.15
MW-108	2 - 12	12.74	--	--	--	--	--	--	--	--	4.93	7.81	4.02	8.72	9.91	2.83	4.25	8.49	5.06	7.68
MW-109	3 - 13	24.12	--	--	--	--	--	--	--	--	12.07	12.05	11.27	12.85	10.27	13.85	10.73	13.39	11.76	12.36
MW-110	3 - 13	15.58	--	--	--	--	--	--	--	--	5.99	9.59	1.46	14.12	1.04	14.54	2.56	13.02	6.57	9.01
MW-111	4 - 14	18.95	--	--	--	--	--	--	--	--	11.38	7.57	10.62	8.33	10.65	8.3	10.68	8.27	11.11	7.84
MW-112	3 - 10	18.16	--	--	--	--	--	--	--	--	Dry	Dry	8.01	10.15	Dry	Dry	Dry	Dry	Dry	Dry
MW-112a	4-19	17.78	--	--	--	--	--	--	--	--	--	--	12.76	5.02	12.76	5.02	12.67	5.11	12.81	4.97
MW-113	10-20	26.16	--	--	--	--	--	--	--	--	--	--	11.66	14.5	11.44	14.72	11.51	14.65	11.99	14.17
MW-114	7-17	29.43	--	--	--	--	--	--	--	--	--	--	12.67	16.76	11.27	18.16	11.53	17.9	12.88	16.55
MW-115	10-25	27.15	--	--	--	--	--	--	--	--	--	--	17.19	9.96	16.21	10.94	16.63	10.52	17.42	9.73
MW-116	5-15	13.45	--	--	--	--	--	--	--	--	--	--	8.78	4.67	8.34	5.11	8.65	4.8	8.76	4.69
MW-117S	5 - 20	21.94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-117T	35 - 45	21.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-117D	60 - 70	21.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-118S	3 - 14	15.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-118T	39.5 - 49.5	15.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-118D	70 - 80	15.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-119S	5 - 20	11.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-119T	42 - 47	11.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-120S	5 - 20	12.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-120D	28 - 38	12.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-121S	5 - 20	12.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-121D	32 - 47	12.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-122	4 - 16	16.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GEO-1	5 - 20	25.88	11.85	14.03	--	--	--	--	11.55	14.33	--	--	--	--	11.36	14.52	11.38	14.5	11.73	14.15
GEO-2	5 - 20	26.54	12.51	14.03	--	--	--	--	12.2	14.34	--	--	--	--	11.97	14.57	11.99	14.55	12.4	14.14
GEO-3	5 - 20	25.64	12.35	13.29	11.63	14.01	11.72	13.92	11.58	14.06	12.21	13.43	11.49	14.15	10.76	14.88	11.04	14.6	11.94	13.7
GEO-4	4 - 19	21.69	12.04	9.65	10.58	11.11	11.31	10.38	10.77	10.92	11.83	9.86	11.03	10.66	10.51	11.18	10.87	10.82	11.64	10.05
GEO-5	5 - 20	20.14	11.15	8.99	9.47	10.67	10.48	9.66	9.73	10.41	11.02	9.12	10.15	9.99	9.7	10.44	10.01	10.13	10.79	9.35
GEO-6	5 - 20	17.62	9.26	8.36	7.65	9.97	8.82	8.8	8.11	9.51	9.3	8.32	8.54	9.08	8.32	9.3	8.25	9.37	8.9	8.72
SH-1	9 - 14	29.55	Dry	Dry	--	--	--	--	Dry	Dry	--	--	--	--	--	--	--	--	--	--
SH-2	7 - 14	29.64	12	17.64	--	--	--	--	Dry	Dry	--	--	--	--	--	--	--	--	--	--
SH-3	8 - 13	29.66	Dry	Dry	--	--	--	--	Dry	Dry	--	--	--	--	--	--	--	--	--	--
SH-4	11 - 16	29.63	15.1	14.53	--	--	--	--	Dry	Dry	--	--	--	--	--	--	--	--	--	--
SH-5	8 - 13	29.63	Dry	Dry	--	--	--	--	Dry	Dry	--	--	--	--	--	--	--	--	--	--
SH-MW1	10 - 30	24.02	13.17	10.85	--	--	--	--	12.21	11.81	--	--	--	--	12.01	12.01	12.26	11.76	---	---
SH-MW2	10 - 25	24.27	13.41	10.86	--	--	--	--	12.73	11.54	--	--	--	--	12.61	11.66	12.74	11.53	13.25	11.02
SH-MW3	10 - 24	22.31	12.04	10.27	--	--	--	--	11.04	11.27	--	--	--	--	10.81	11.5	--	--	11.72	10.59
MW201	11-21	27.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW202	10.5-20.5	27.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW203	6-18	21.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

General Notes:
1. ft = feet.
2. bgs = below ground surface.
3. ID = identification.
4 GW = groundwater.
5. NAVD = North American Vertical Datum of 1988.
6. The top of the PVC riser was used as the measuring point for depth to groundwater.
7. "--" = Well not yet installed, abandoned, or not measured.

Table 8-1
Groundwater Elevations
50 Tufts Street
Somerville, Massachusetts

Monitoring Well ID	Well Screen Interval (ft bgs)	Gauging Date:	7/16/2007		8/22/2007		9/27/2007		10/23/2007		11/30/2007		1/9/2008		2/26/2008		3/18/2008		4/15/2008	
		Elevation of Measuring Point (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)
MW-1	unknown	25.90	12.04	13.86	--	--	12.26	13.64	12.07	13.83	11.95	13.95	--	--	--	--	--	--	11.42	14.48
MW-2	unknown	25.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	---
MW-3	unknown	25.31	13.94	11.37	--	--	14.34	10.97	13.94	11.37	13.75	11.56	12.86	12.45	12.05	13.26	12.37	12.94	12.81	12.5
MW-101	9-19	26.75	12.85	13.9	13.03	13.72	13.17	13.58	12.91	13.84	13.82	12.93	12.11	14.64	--	--	11.85	14.9	12.02	14.73
MW-102	6-16	18.89	8.74	10.15	9.08	9.81	9.35	9.54	8.97	9.92	8.01	10.88	7.46	11.43	7.29	11.6	7.17	11.72	8.57	10.32
MW-103	6-16	19.47	11.92	7.55	12.3	7.17	12.63	6.84	--	--	12.18	7.29	10.74	8.73	10.51	8.96	10.5	8.97	10.82	8.65
MW-104	5-15	17.67	10.09	7.58	10.36	7.31	10.61	7.06	10.31	7.36	10.07	7.6	8.86	8.81	8.61	9.06	8.48	9.19	9.84	7.83
MW-105	19-29	38.84	22.13	16.71	22.79	16.05	23.18	15.66	22.96	15.88	22.74	16.1	21.39	17.45	20.79	18.05	20.41	18.43	20.91	17.93
MW-106	9 - 19	26.33	12.33	14	12.48	13.85	12.61	13.72	12.39	13.94	12.27	14.06	11.71	14.62	11.51	14.82	11.38	14.95	12.54	13.79
MW-107	2 - 12	14.63	4.52	10.11	4.75	9.88	4.51	10.12	4.47	10.16	4.44	10.19	4.35	10.28	--	--	4.46	10.17	5.58	9.05
MW-108	2 - 12	12.74	6.59	6.15	6.25	6.49	6.28	6.46	5.86	6.88	4.74	8.0	3.71	9.03	4.61	8.13	3.68	9.06	3.91	8.83
MW-109	3 - 13	24.12	12.24	11.88	Dry	Dry	Dry	Dry	Dry	Dry	12.78	11.34	10.64	13.48	10.06	14.06	10.02	14.1	11.64	12.48
MW-110	3 - 13	15.58	7.17	8.41	7.86	7.72	8.37	7.21	6.92	8.66	3.34	12.24	--	--	0.79	14.79	1.12	14.46	1.57	14.01
MW-111	4 - 14	18.95	11.54	7.41	11.96	6.99	12.34	6.61	11.99	6.96	12.27	6.68	10.51	8.44	10.5	8.45	10.54	8.41	16.64	2.31
MW-112	3 - 10	18.16	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	--	--	----	---
MW-112a	4-19	17.78	12.88	4.9	--	--	12.95	4.83	12.8	4.98	--	--	12.43	5.35	12.52	5.26	12.61	5.17	13.71	4.07
MW-113	10-20	26.16	12.22	13.94	12.43	13.73	12.58	13.58	12.3	13.86	12.6	13.56	11.5	14.66	11.28	14.88	11.15	15.01	11.39	14.77
MW-114	7-17	29.43	15.57	13.86	14.24	15.19	14.84	14.59	14.66	14.77	14.31	15.12	12.08	17.35	11.11	18.32	10.75	18.68	12.42	17.01
MW-115	10-25	27.15	17.97	9.18	18.38	8.77	18.81	8.34	18.37	8.78	18.24	8.91	16.18	10.97	15.85	11.3	15.86	11.29	16.45	10.7
MW-116	5-15	13.45	--	--	8.85	4.6	8.91	4.54	8.83	4.62	--	--	8.6	4.85	8.68	4.77	8.77	4.68	8.85	4.6
MW-117S	5 - 20	21.94	15.27	6.67	15.7	6.24	16.03	5.91	16.2	5.74	15.95	5.99	13.97	7.97	13.52	8.42	13.5	8.44	14.22	7.72
MW-117T	35 - 45	21.87	15.95	5.92	16.38	5.49	16.81	5.06	16.91	4.96	16.58	5.29	14.58	7.29	13.97	7.9	13.9	7.97	14.67	7.2
MW-117D	60 - 70	21.78	15.87	5.91	16.26	5.52	16.69	5.09	16.77	5.01	16.44	5.34	14.46	7.32	13.86	7.92	13.81	7.97	14.51	7.27
MW-118S	3 - 14	15.52	11.64	3.88	9.84	5.68	10.2	5.32	9.42	6.1	9.4	6.12	8.55	6.97	8.34	7.18	8.4	7.12	10	5.52
MW-118T	39.5 - 49.5	15.30	10.36	4.94	10.51	4.79	10.74	4.56	10.68	4.62	10.5	4.8	9.93	5.37	9.49	5.81	9.53	5.77	9.83	5.47
MW-118D	70 - 80	15.15	10.18	4.97	10.32	4.83	10.55	4.6	10.49	4.66	10.25	4.9	9.55	5.6	9.3	5.85	9.35	5.8	9.64	5.51
MW-119S	5 - 20	11.74	--	--	4.91	6.83	4.99	6.75	4.93	6.81	4.85	6.89	4.63	7.11	4.6	7.14	4.56	7.18	4.91	6.83
MW-119T	42 - 47	11.67	--	--	6.45	5.22	6.8	4.87	6.72	4.95	6.57	5.1	5.82	5.85	5.63	6.04	5.78	5.89	5.97	5.7
MW-120S	5 - 20	12.54	--	--	5.25	7.29	5.35	7.19	4.71	7.83	4.62	7.92	3.51	9.03	4.06	8.48	4.0	8.54	5.1	7.44
MW-120D	28 - 38	12.45	--	--	--	--	4.21	8.24	3.94	8.51	3.48	8.97	3.17	9.28	2.96	9.49	3.11	9.34	3.26	9.19
MW-121S	5 - 20	12.44	--	--	--	--	--	--	7.36	5.08	7.41	5.03	7.24	5.2	7.36	5.08	7.41	5.03	9.39	3.05
MW-121D	32 - 47	12.81	--	--	--	--	--	--	7.92	4.89	7.75	5.06	6.95	5.86	6.83	5.98	6.91	5.9	7.31	5.5
MW-122	4 - 16	16.42	--	--	--	--	--	--	--	--	--	--	--	--	12.98	3.44	13	3.42	13.03	3.39
GEO-1	5 - 20	25.88	11.93	13.95	12.1	13.78	12.21	13.67	11.98	13.9	11.91	13.97	11.41	14.47	11.22	14.66	--	--	11.25	14.63
GEO-2	5 - 20	26.54	13.6	12.94	12.81	13.73	12.91	13.63	12.63	13.91	12.57	13.97	12.02	14.52	11.77	14.77	--	--	12.81	13.73
GEO-3	5 - 20	25.64	---	---	12.7	12.94	12.94	12.7	12.61	13.03	12.54	13.1	10.99	14.65	10.71	14.93	--	--	10.97	14.67
GEO-4	4 - 19	21.69	12.09	9.6	12.55	9.14	13.02	8.67	12.64	9.05	12.47	9.22	11.72	9.97	10.36	11.33	10.34	11.35	11.46	10.23
GEO-5	5 - 20	20.14	11.25	8.89	11.74	8.4	11.18	8.96	11.72	8.42	12.62	7.52	9.92	10.22	9.42	10.72	9.52	10.62	10.8	9.34
GEO-6	5 - 20	17.62	9.5	8.12	9.92	7.7	10.22	7.4	9.96	7.66	9.96	7.66	8.21	9.41	7.78	9.84	7.86	9.76	9.11	8.51
SH-1	9 - 14	29.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	---	---
SH-2	7 - 14	29.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	---	---
SH-3	8 - 13	29.66	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	---	---
SH-4	11 - 16	29.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	---	---
SH-5	8 - 13	29.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	---	---
SH-MW1	10 - 30	24.02	---	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	---	---
SH-MW2	10 - 25	24.27	13.48	10.79	13.72	10.55	14.04	10.23	13.68	10.59	13.85	10.42	12.77	11.5	12.49	11.78	12.46	11.81	13.62	10.65
SH-MW3	10 - 24	22.31	12.08	10.23	12.43	9.88	12.79	9.52	12.41	9.9	12.05	10.26	11.55	10.76	10.68	11.63	10.65	11.66	11.83	10.48
MW201	11-21	27.51	--	--	13.71	13.8	13.83	13.68	13.58	13.93	13.5	14.01	12.98	14.53	12.76	14.75	12.64	14.87	12.85	14.66
MW202	10.5-20.5	27.82	--	--	13.99	13.83	14.08	13.74	13.88	13.94	13.81	14.01	13.41	14.41	13.22	14.6	13.12	14.7	12.73	15.09
MW203	6-18	21.80	--	--	14.05	7.75	14.39	7.41	13.86	7.94	13.61	8.19	12.86	8.94	12.03	9.77	12	9.8	13.31	8.49

General Notes:

1. ft = feet.
2. bgs = below ground surface.
3. ID = identification.
4. GW = groundwater.
5. NAVD = North American Vertical Datum of 1988.
6. The top of the PVC riser was used as the measuring point for depth to groundwater.
7. "--" = Well not yet installed, abandoned, or not measured.

Table 8-1
Groundwater Elevations
50 Tufts Street
Somerville, Massachusetts

		Gauging Date:	5/19/2008		7/14/08		8/22/08		10/20/08		1/13/09		4/13/09		7/14/09		10/14/09		4/12/10		10/27/10		4/20/11	
Monitoring Well ID	Well Screen Interval (ft bgs)	Elevation of Measuring Point (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)	Depth to GW (ft)	Elevation of GW (ft NAVD)
MW-1	unknown	25.90	11.57	14.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	unknown	25.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	unknown	25.31	12.99	---	--	--	--	--	--	--	12.49	12.82	12.28	13.03	12.92	12.39	13.19	12.12	--	--	--	--	--	--
MW-101	9-19	26.75	12.26	14.49	13.11	13.64	--	--	12.61	14.14	12.07	14.68	11.91	14.84	12.2	14.55	12.37	14.38	11.61	15.14	--	--	11.73	15.02
MW-102	6-16	18.89	7.9	10.99	9.51	9.38	8.00	10.89	8.49	10.4	7.50	11.39	7.35	11.54	7.85	11.04	7.99	10.9	7.11	11.78	--	--	7.04	11.85
MW-103	6-16	19.47	11.11	8.36	12.17	7.30	11.17	8.30	11.87	7.6	10.73	8.74	10.57	8.9	11.07	8.4	11.34	8.13	10.47	9.00	--	--	10.39	9.08
MW-104	5-15	17.67	9.25	8.42	9.67	8.00	9.06	8.61	9.72	7.95	8.71	8.96	7.98	9.69	8.84	8.83	9.38	8.29	8.52	9.15	--	--	9.28	8.39
MW-105	19-29	38.84	21,24	17.6	22.02	16.82	21.40	17.44	21.8	17.04	20.9	17.94	20.65	18.19	21.4	17.44	21.8	17.04	19.84	19.00	--	--	20.63	18.21
MW-106	9 - 19	26.33	11.72	14.61	11.68	14.65	11.73	14.60	11.64	14.69	11.6	14.73	11.49	14.84	overflowing	--	overflowing	--	11.16	15.17	--	--	11.39	14.94
MW-107	2 - 12	14.63	---	---	4.52	10.11	4.41	10.22	4.49	10.14	4.5	10.13	4.47	10.16	overflowing	--	overflowing	--	4.31	10.32	--	--	4.43	10.2
MW-108	2 - 12	12.74	3.99	8.75	5.16	7.58	4.44	8.30	4.71	8.03	3.4	9.34	3.73	9.01	4.37	8.37	4.66	8.08	3.86	8.88	--	--	3.56	9.18
MW-109	3 - 13	24.12	11.29	12.83	11.87	12.25	11.18	12.94	11.73	12.39	10.43	13.69	10.4	13.72	11.11	13.01	--	--	9.88	14.24	--	--	10.10	14.02
MW-110	3 - 13	15.58	2.5	13.08	--	--	3.59	11.99	--	--	1.45	14.13	1.1	14.48	2.88	12.7	2.42	13.16	1.39	14.19	--	--	1.67	13.91
MW-111	4 - 14	18.95	10.71	8.24	12.23	6.72	10.73	8.22	11.37	7.58	10.55	8.4	10.56	8.39	10.67	8.28	10.41	8.54	10.57	8.38	--	--	10.62	8.33
MW-112	3 - 10	18.16	---	---	--	--	8.33	9.83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-112a	4-19	17.78	12.77	5.01	13.56	4.22	12.93	4.85	13.01	4.77	12.78	5.0	12.63	5.15	12.78	5.0	12.58	5.2	12.62	5.16	12.31	5.47	12.14	5.64
MW-113	10-20	26.16	11.62	14.54	12.01	14.15	11.63	14.53	11.99	14.17	11.41	14.75	11.23	14.93	11.56	14.6	11.73	14.43	10.93	15.23	--	--	11.00	15.16
MW-114	7-17	29.43	12.3	17.13	13.24	16.19	12.21	17.22	13.19	16.24	11.25	18.18	10.97	18.46	12.04	17.39	--	--	10.24	19.19	--	--	10.46	18.97
MW-115	10-25	27.15	16.72	10.43	18.49	8.66	16.78	10.37	17.8	9.35	16.35	10.8	15.4	11.75	16.58	10.57	17.4	9.75	16.43	10.72	--	--	16.22	10.93
MW-116	5-15	13.45	8.88	4.57	9.09	4.36	9.01	4.44	--	--	8.94	--	8.87	4.58	8.97	4.48	8.76	4.69	8.85	4.6	--	--	8.32	5.13
MW-117S	5 - 20	21.94	14.6	7.34	14.99	6.95	13.90	8.04	14.67	7.27	14.02	7.92	14.38	7.56	14.66	7.28	14.75	7.19	13.32	8.62	--	--	14.06	7.88
MW-117T	35 - 45	21.87	14.94	6.93	15.68	6.19	15.27	6.60	15.26	6.61	14.45	7.42	14.43	7.44	15.03	6.84	15.26	6.61	13.56	8.31	--	--	14.18	7.69
MW-117D	60 - 70	21.78	14.89	6.89	15.61	6.17	14.67	7.11	15.27	6.51	14.3	7.48	14.26	7.52	14.89	6.89	15.13	6.65	13.48	8.3	--	--	14.01	7.77
MW-118S	3 - 14	15.52	9.38	6.14	9.64	5.88	8.48	7.04	9.05	6.47	8.41	7.11	8.7	6.82	9.43	6.09	9.01	6.51	8.31	7.21	--	--	8.55	6.97
MW-118T	39.5 - 49.5	15.30	9.94	5.36	10.35	4.95	9.92	5.38	10.19	5.11	9.73	5.57	9.64	5.66	9.92	5.38	9.99	5.31	9.49	5.81	--	--	9.33	5.97
MW-118D	70 - 80	15.15	9.8	5.35	10.11	5.04	9.70	5.45	9.99	5.16	9.54	5.61	9.47	5.68	9.74	5.41	9.73	5.42	9.29	5.86	--	--	9.15	6.00
MW-119S	5 - 20	11.74	4.92	6.82	4.94	6.80	6.08	5.66	4.08	7.66	4.41	7.33	4.21	7.53	4.47	7.27	4.33	7.41	4.33	7.41	--	--	4.08	7.66
MW-119T	42 - 47	11.67	6.1	5.57	6.52	5.15	4.52	7.15	6.78	4.89	5.85	5.82	5.8	5.87	6.04	5.63	6.01	5.66	5.68	5.99	--	--	5.55	6.12
MW-120S	5 - 20	12.54	4.57	7.97	5.18	7.36	4.61	7.93	4.01	8.53	4.03	8.51	3.85	8.69	4.31	8.23	3.58	8.96	3.98	8.56	--	--	3.65	8.89
MW-120D	28 - 38	12.45	3.44	9.01	3.82	8.63	2.90	9.55	3.32	9.13	3.18	9.27	3.11	9.34	3.31	9.14	3.29	9.16	3.04	9.41	--	--	3.18	9.27
MW-121S	5 - 20	12.44	7.29	5.15	9.21	3.23	7.70	4.74	9.01	3.43	7.68	4.76	7.57	4.87	7.62	4.82	7.71	4.73	7.67	4.77	--	--	7.12	5.32
MW-121D	32 - 47	12.81	7.27	5.54	7.64	5.17	7.30	5.51	9.64	3.17	7.07	5.74	6.98	5.83	7.27	5.54	7.37	5.44	6.87	5.94	--	--	6.77	6.04
MW-122	4 - 16	16.42	12.99	3.43	13.15	3.27	13.17	3.25	11.42	5.0	13.15	3.27	13.16	3.26	13.14	3.28	13.12	3.3	13.09	3.33	13.04	3.38	13.06	3.36
GEO-1	5 - 20	25.88	11.4	14.48	12.32	13.56	12.00	13.88	12.14	13.74	11.26	14.62	11.07	14.81	11.31	14.57	11.54	14.34	17.06	8.82	--	--	10.92	14.96
GEO-2	5 - 20	26.54	12.01	14.53	11.73	14.81	11.41	15.13	11.58	14.96	11.88	14.66	11.7	14.84	11.99	14.55	12.25	14.29	11.41	15.13	--	--	10.55	15.99
GEO-3	5 - 20	25.64	---	---	12.05	13.59	11.57	14.07	--	--	--	--	10.86	14.78	11.48	14.16	11.79	13.85	10.27	15.37	--	--	10.62	15.02
GEO-4	4 - 19	21.69	11.13	10.56	11.60	10.09	11.16	10.53	11.89	9.8	10.56	11.13	10.21	11.48	11.00	10.69	--	--	10.26	11.43	--	--	--	--
GEO-5	5 - 20	20.14	10.21	9.93	10.89	9.25	10.28	9.86	11.79	8.35	9.70	10.44	9.30	10.84	10.08	10.06	10.44	9.7	9.48	10.66	--	--	9.18	10.96
GEO-6	5 - 20	17.62	8.51	9.11	9.20	8.42	7.91	9.71	10.95	6.67	8.02	9.6	7.48	10.14	8.18	9.44	8.66	8.96	7.62	10	--	--	7.63	9.99
SH-1	9 - 14	29.55	---	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-2	7 - 14	29.64	---	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-3	8 - 13	29.66	---	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-4	11 - 16	29.63	---	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-5	8 - 13	29.63	---	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW1	10 - 30	24.02	---	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SH-MW2	10 - 25	24.27	12.89	11.38	11.83	12.44	12.92	11.35	12.01	12.26	12.63	11.64	12.33	11.94	12.77	11.5	13.01	11.26	10.61	13.66	--	--	12.29	11.98
SH-MW3	10 - 24	22.31	11.21	11.1	13.27	9.04	11.30	11.01	12.49	9.82	10.87	11.44	10.52	11.79	11.12	11.19	11.46	10.85	12.39	9.92	--	--	10.46	11.85
MW201	11-21	27.51	13.94	13.57	13.31	14.2	13.00	14.51	14.64	12.87	13.27	14.24	12.69	14.82	12.94	14.57	13.09	14.42	12.42	15.09	--	--	12.57	14.94
MW202	10.5-20.5	27.82	13.37	14.45	13.68	14.14	13.41	14.41	13.29	14.53	12.82	15	13.15	14.67	13.33	14.49	13.55	14.27	12.94	14.88	--	--	13.02	14.80
MW203	6-18	21.80	12.68	9.12	13.15	8.65	12.55	9.25	13.02	8.78	12.25	9.55	11.5	10.3	12.29	9.51	12.77	9.03	12.03	9.77	--	--	11.83	9.97

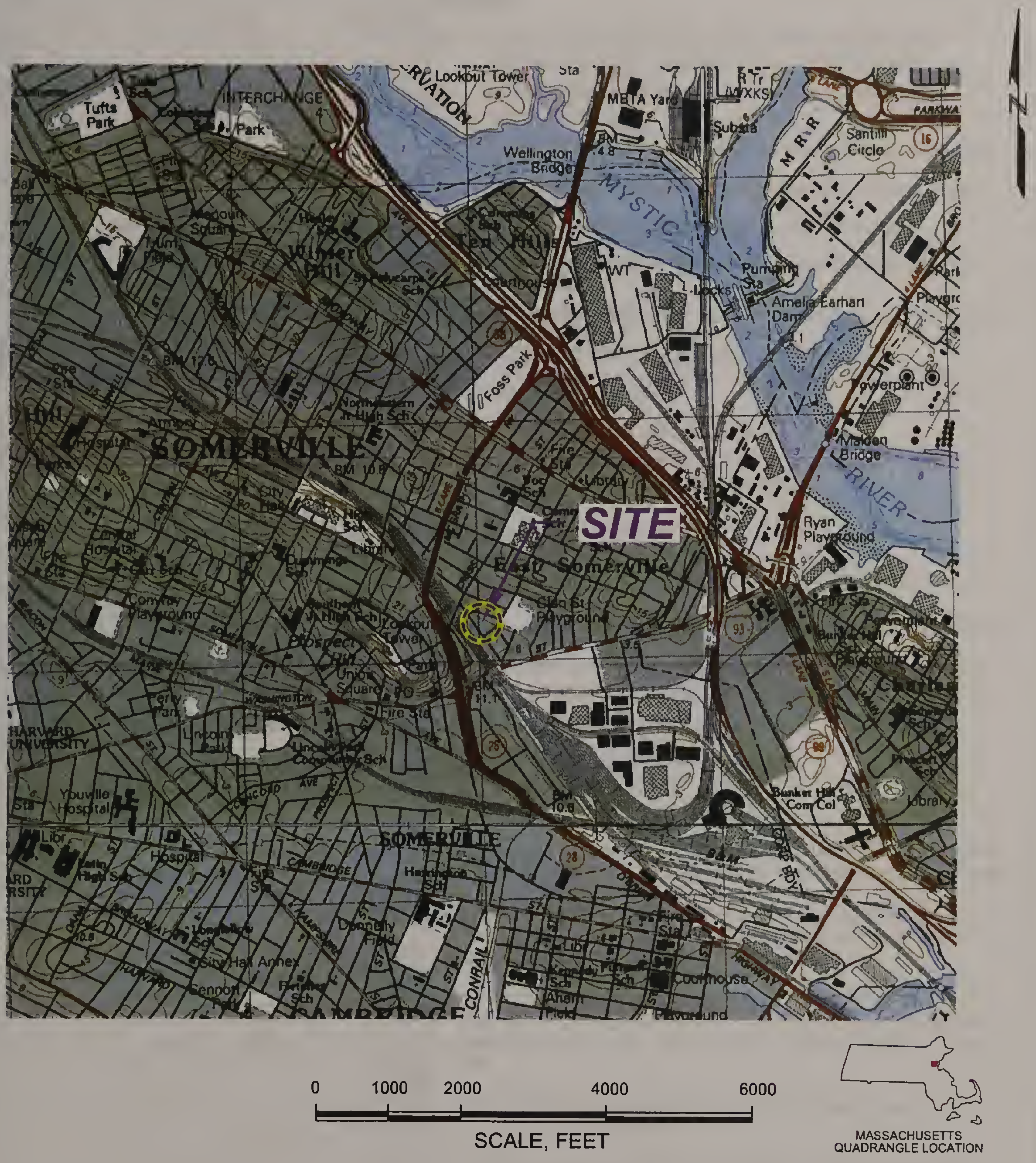
General Notes:

1. ft = feet.
2. bgs = below ground surface.
3. ID = identification.
4 GW = groundwater.
5. NAVD = North American Vertical Datum of 1988.
6. The top of the PVC riser was used as the measuring point for depth to groundwater.
7. "--" = Well not yet installed, abandoned, or not measured.

GEI Consultants

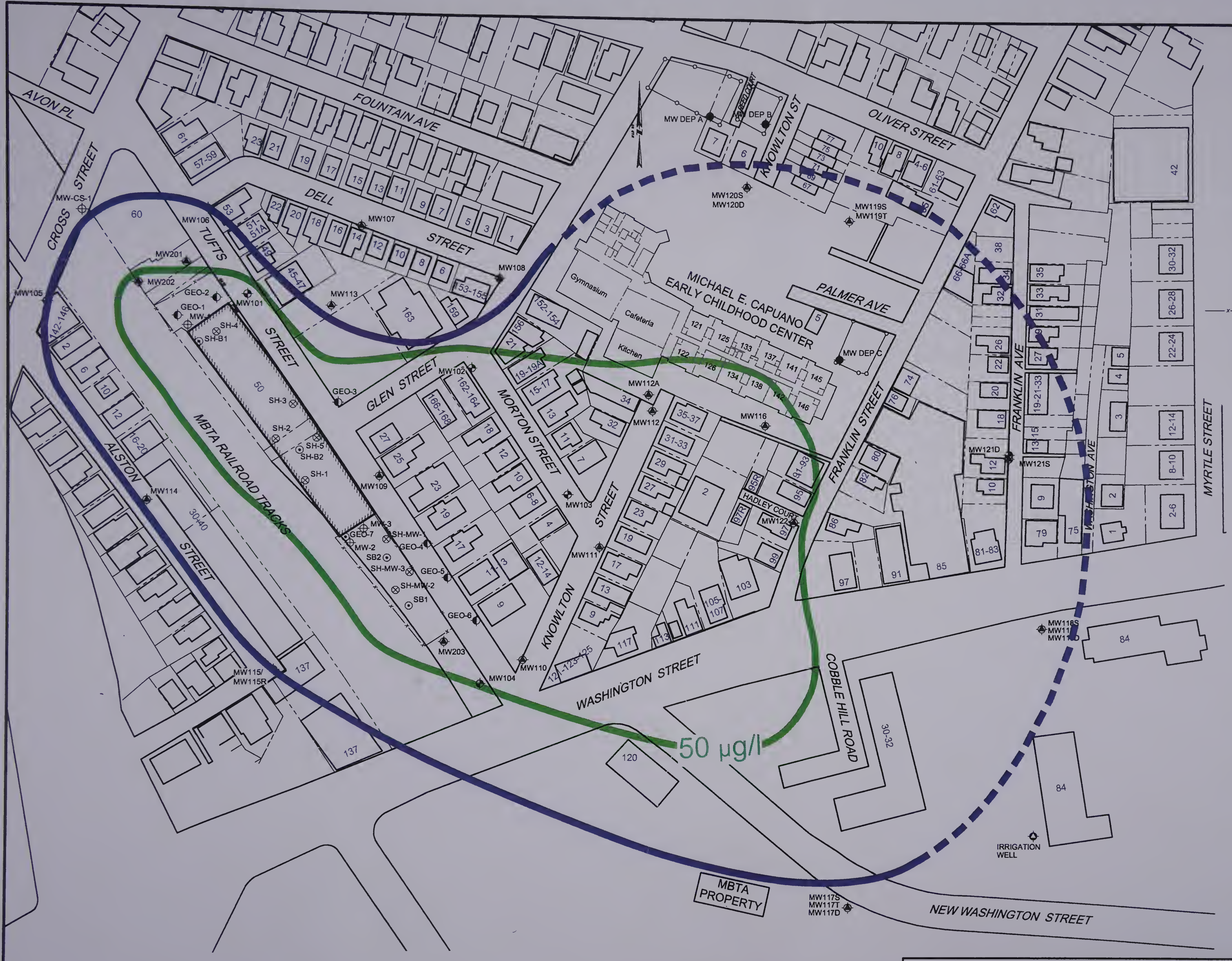
Geotechnical
Environmental
Water Resources
Ecological

Figures



This Image provided by MassGIS is taken from
U.S.G.S. Topographic 7.5 X 15 Minute Series
Boston North, MA Quadrangle, 1985.
Datum is National Geodetic Vertical Datum (NGVD 1929).
Contour Interval is 3 Meters.

Phase IV Final Inspection Report, RMR No. 15, and Phase V Remedy Operation Status Report 50 Tufts Street, Somerville, Massachusetts	GEI Consultants	SITE LOCATION MAP
UniFirst Corporation Wilmington, Massachusetts	Project 04516-3	August 2011 Fig. 1-1



LEGEND:

- ◆ MONITORING WELL WITH SOIL VAPOR SAMPLE PORT INSTALLED BY GEI, JANUARY 2007 - JANUARY 2008
- ⊗ MONITORING WELL INSTALLED BY SANBORN HEAD ASSOCIATES, 2002
- ◐ MONITORING WELL INSTALLED BY GEOINSIGHT, JUNE 2004
- ⊙ SOIL BORING ADVANCED BY GEOINSIGHT, AUGUST 2004
- ⊕ MONITORING WELL INSTALLED BY GEI, MAY 2006
- ● DRIVEN POINT MONITORING WELL INSTALLED BY MADEP, MAY 2007
- ⊕ MONITORING WELL INSTALLED PREVIOUSLY, DATE UNKNOWN
- △ PREVIOUSLY INSTALLED IRRIGATION WELL
- —x—x— CHAIN LINK FENCE
- 138 ROOM NUMBER AT CAPUANO SCHOOL
- ▱ BOUNDARY OF COMMUNITY GARDENS
- 84 STREET ADDRESS
- MBTA = MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
- 🟦 DISPOSAL SITE BOUNDARY (DASHED WHERE INFERRED)
- 🟩 EXTENT OF PCE CONCENTRATION IN GROUNDWATER GREATER THAN OR EQUAL TO 50 µg/l.
- µg/l = MICROGRAMS PER LITER

GENERAL NOTES:

1. HORIZONTAL CONTROL FOR THIS PLAN WAS ESTABLISHED BY GPS AND IS BASED ON THE NORTH AMERICAN DATUM OF 1983.
2. STREET AND PROPERTY LINES BASED ON SOMERVILLE ASSESSORS' MAPS AND ARE BEST FIT RELATIVE TO THE LOCATION OF THE 50 TUFTS ST. BUILDING.
3. MONITORING WELL LOCATIONS AND ELEVATIONS, AND CAPUANO CENTER COMMUNITY GARDEN LOCATIONS WERE ESTABLISHED BY ON THE GROUND SURVEYS BY BSC GROUP, INC.
4. GEI OBSERVED DECOMMISSIONING OF SH-MW1 AND SH-1 THROUGH SH-5 IN 2007.
5. THE 50 µg/l BOUNDARY LINE IS BASED ON GROUNDWATER ANALYTICAL RESULTS COLLECTED THROUGH JULY 2009.

0 150 300

SCALE, FEET

Phase IV Final Inspection Report, RMR No. 15,
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UniFirst Corporation
Wilmington, Massachusetts

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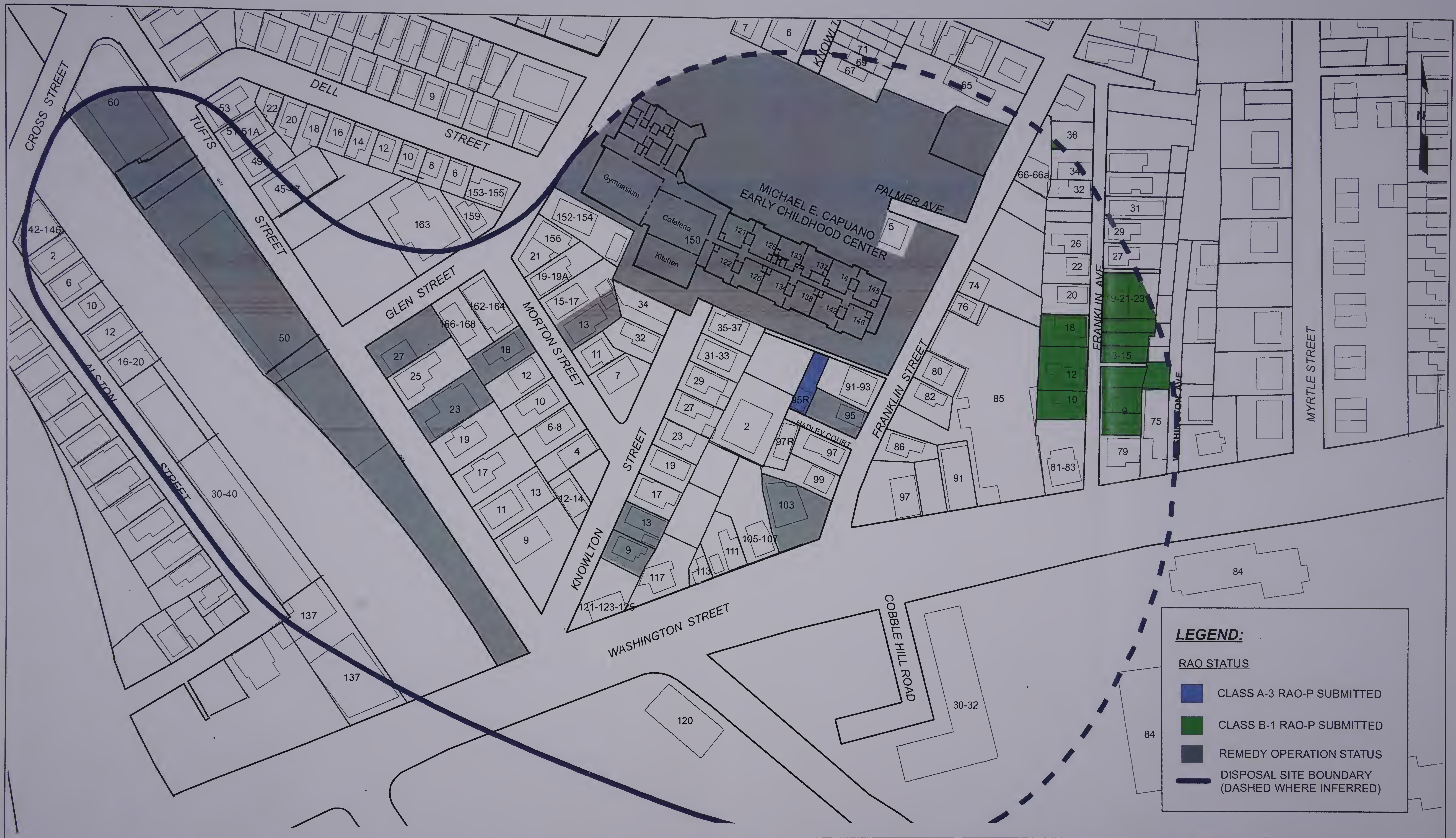
DISPOSAL SITE MAP
AND
SITE BOUNDARY

Project 04516-3

August 2011

Fig. 1-2

N:\04516\#Drafting\04516-3\Phase IV Status Report No 4\045163 Phase IV SR 4 Fig 1-2



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Wilmington, Massachusetts

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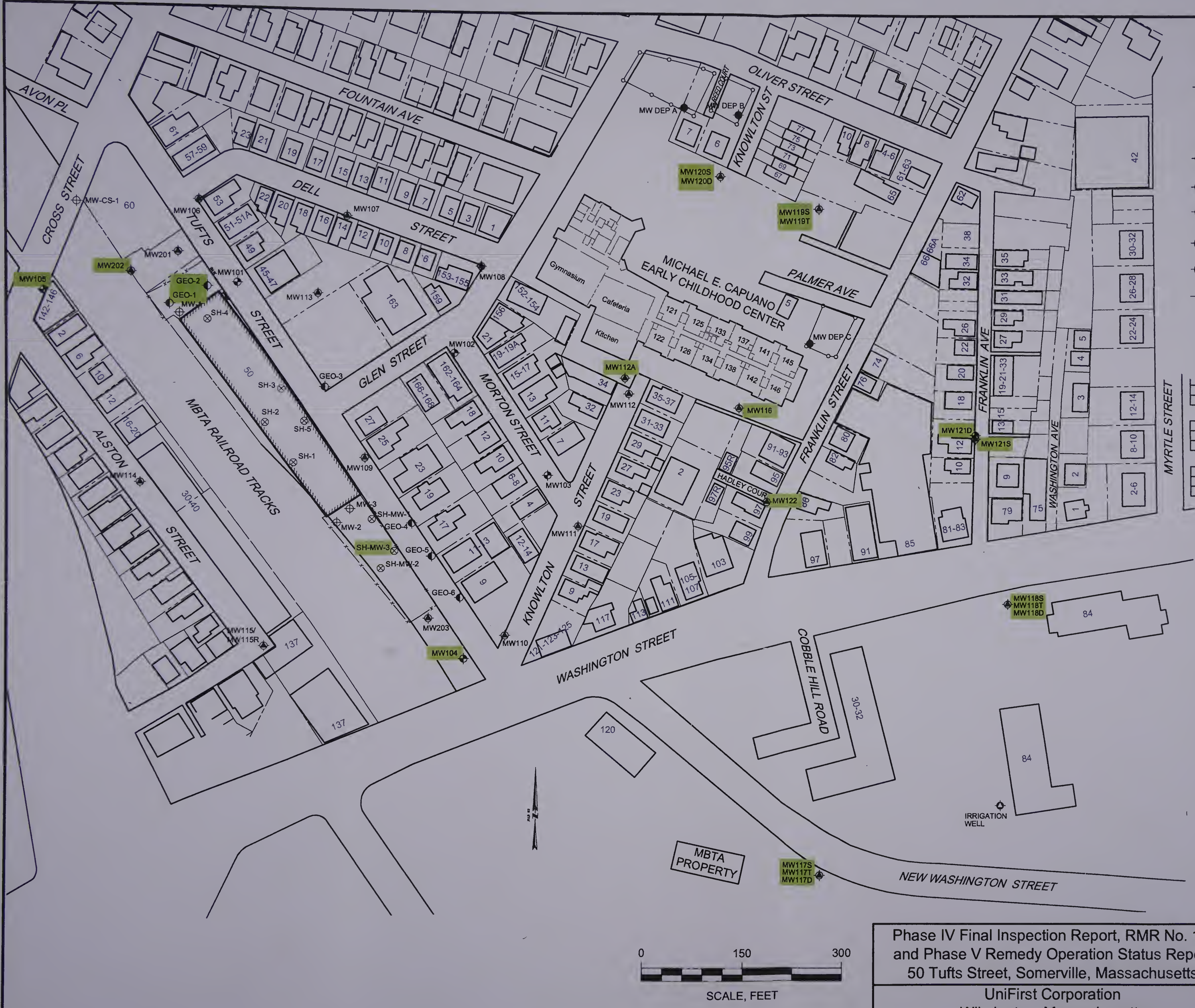
Project 04516-3

RAO STATUS

August 2011

Fig. 2-1

N:\04516\20.0 GIS Data\Map_Files\Tufts_St_RAO_Tracking (for reports).mxd



LEGEND:

- MONITORING WELL WITH SOIL VAPOR SAMPLE PORT INSTALLED BY GEI, JANUARY 2007 - JANUARY 2008
- ⊗ MONITORING WELL INSTALLED BY SANBORN HEAD ASSOCIATES, 2002
- MONITORING WELL INSTALLED BY GEOINSIGHT, JUNE 2004
- MONITORING WELL INSTALLED BY GEI, MAY 2006
- ● DRIVEN POINT MONITORING WELL INSTALLED BY MADEP, MAY 2007
- ⊕ MONITORING WELL INSTALLED PREVIOUSLY, DATE UNKNOWN
- PREVIOUSLY INSTALLED IRRIGATION WELL
- —x—x— CHAIN LINK FENCE
- 138 ROOM NUMBER AT CAPUANO SCHOOL
- BOUNDARY OF COMMUNITY GARDENS
- 84 STREET ADDRESS
- 🟩 MONITORING WELL SAMPLED DURING THIS REPORTING PERIOD

GENERAL NOTES:

1. MONITORING WELL LOCATIONS AND ELEVATIONS, AND CAPUANO CENTER COMMUNITY GARDEN LOCATIONS WERE ESTABLISHED BY ON THE GROUND SURVEYS BY BSC GROUP, INC.
2. HORIZONTAL CONTROL FOR THIS PLAN WAS ESTABLISHED BY GPS AND IS BASED ON THE NORTH AMERICAN DATUM OF 1983.
3. VERTICAL CONTROL FOR THIS PLAN WAS ESTABLISHED BY GPS AND IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.
4. STREET PROPERTY LINES, AND BUILDINGS ARE BASED ON SOMERVILLE ASSESSORS MAPS AND ARE BEST FIT RELATIVE TO THE LOCATION OF THE 50 TUFTS ST. BUILDING.
5. GEI OBSERVED ABANDONMENT OF SH-MW1 AND SH-1 THROUGH SH-5 IN 2007.

Phase IV Final Inspection Report, RMR No. 15,
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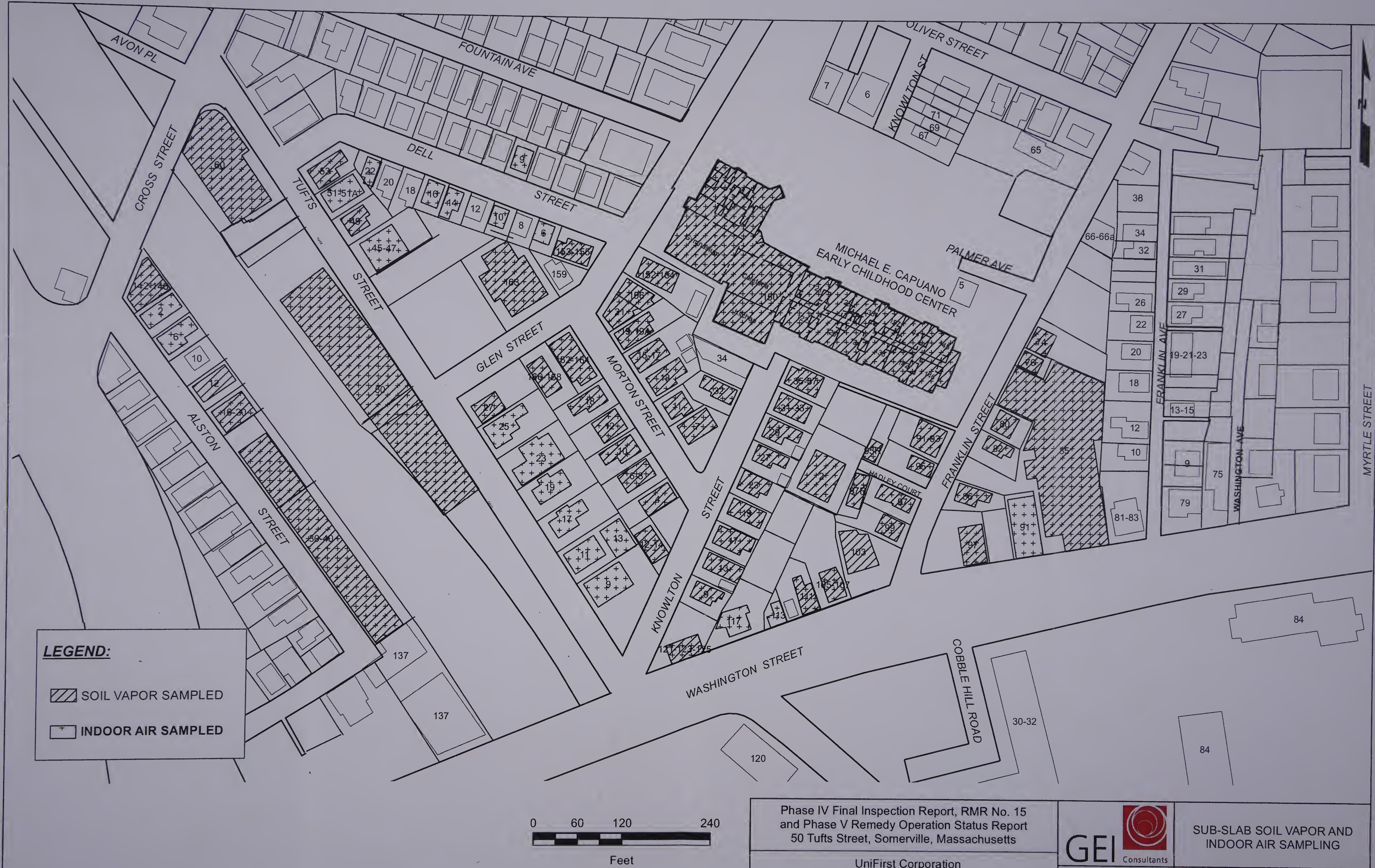
MONITORING WELL
LOCATIONS

Project 04516-3 | August 2011 | Fig. 3-1

N:\04516\#Drafting\04516-3\Phase IV Status Report No 4\045163 Phase IV SR 4 Fig 3-1



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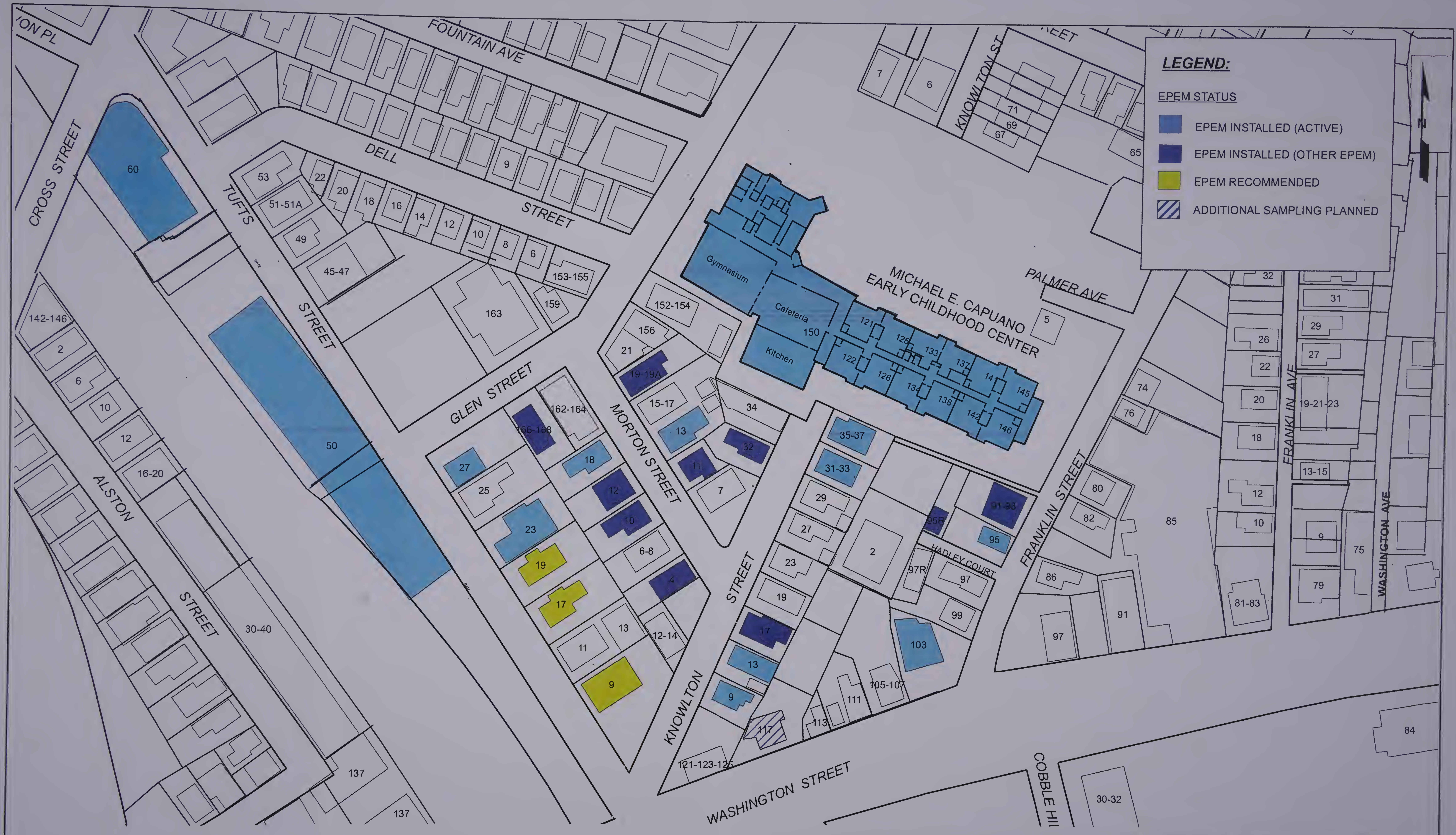
Project 04516-3

SUB-SLAB SOIL VAPOR AND INDOOR AIR SAMPLING

August 2011

Fig. 3-2

N:\04516\20.0 GIS Data\Map_Files\Phase IV Status Fig 2-2 IA and SV sampling.mxd



0 50 100 200

SCALE, FEET

Phase IV Final Inspection Report, RMR No. 15
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Wilmington, Massachusetts

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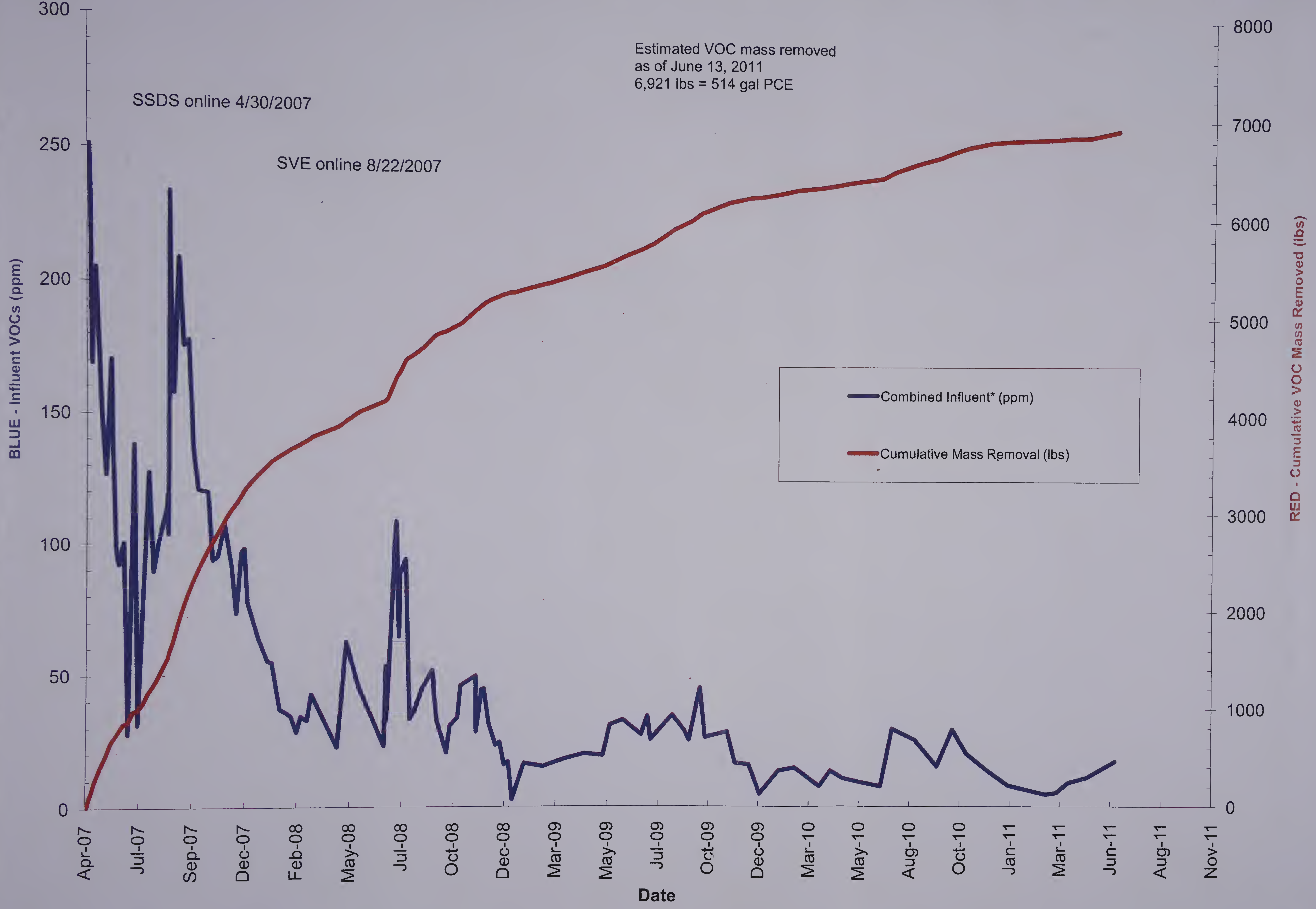
EPEM INSTALLATION PROGRESS

Project 04516-3

August 2011

Fig. 5-1

N:\04516\20.0 GIS Data\Map_Files\Tufts_St_GIS_Master_Map.mxd



*Influent concentrations measured by PID

General Notes:

lbs = pounds.

PCE = tetrachloroethylene (perchloroethylene).

ppm = parts per million.

SSDS = sub-slab depressurization system.

SVE = soil vapor extraction system.

VOC = volatile organic compound.

*Influent concentrations measured by a photoionization detector (PID).

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COMBINED INFLUENT VOC
CONCENTRATIONS AND
CUMULATIVE VOC REMOVAL

August 2011

Fig. 7-1

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Geotechnical
Environmental
Water Resources
Ecological

Appendix A

MassDEP Transmittal Forms BWSC-108, BWSC-108A, and BWSC-108B and e-DEP Transmittal Receipts

Comprehensive Response Action Transmittal Forms:

- BWSC-108A 1 of 5 (50 Tufts SSDS)
- BWSC-108B 1 of 5 (50 Tufts SSDS)
- BWSC-105A 2 of 5 (50 Tufts SVE)
- BWSC-108B 2 of 5 (50 Tufts SVE)
- BWSC-108A 3 of 5 (Capuano Center)
- BWSC-108B 3 of 5 (Capuano Center)
- BWSC-108A 4 of 5 (Residences)
- BWSC-108A 5 of 5 (MNA)

Massachusetts Department of Environmental Protection

Bureau of Waste Site Cleanup

BWSC108

COMPREHENSIVE RESPONSE ACTION TRANSMITTAL FORM & PHASE I COMPLETION STATEMENT

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

Release Tracking Number: 3 - 23246

A. SITE LOCATION:

1. Site Name: 50 TUFTS ST & PROP ACROSS THE ST

2. Street Address: 50 TUFTS ST

3. City/Town: SOMERVILLE

4. ZIP Code: 02145-4129

☑ 5. Check here if a Tier Classification Submittal has been provided to DEP for this disposal site.

☐ a. Tier IA ☐ b. Tier IB ☑ c. Tier IC ☐ d. Tier II

6. If applicable, provide the Permit Number: W085813

B. THIS FORM IS BEING USED (check all that apply)

☐ 1. Submit a **Phase I Completion Statement**, pursuant to 310 CMR 40.0484.

☐ 2. Submit a **Revised Phase I Completion Statement**, pursuant to 310 CMR 40.0484.

☐ 3. Submit a **Phase II Scope of Work**, pursuant to 310 CMR 40.0834.

☐ 4. Submit an **interim Phase II Report**. This report does not satisfy the response action deadline requirements in 310 CMR 40.0500.

☐ 5. Submit a **final Phase II Report and Completion Statement**, pursuant to 310 CMR 40.0836.

☐ 6. Submit a **Revised Phase II Report and Completion Statement**, pursuant to 310 CMR 40.0836.

☐ 7. Submit a **Phase III Remedial Action Plan and Completion Statement**, pursuant to 310 CMR 40.0862.

☐ 8. Submit a **Revised Phase III Remedial Action Plan and Completion Statement**, pursuant to 310 CMR 40.0862.

☐ 9. Submit a **Phase IV Remedy Implementation Plan**, pursuant to 310 CMR 40.0874.

☐ 10. Submit a **Modified Phase IV Remedy Implementation Plan**, pursuant to 310 CMR 40.0874.

☐ 11. Submit an **As-Built Construction Report**, pursuant to 310 CMR 40.0875.

☑ 12. Submit a **Phase IV Status Report**, pursuant to 310 CMR 40.0877.

☑ 13. Submit a **Phase IV Completion Statement**, pursuant to 310 CMR 40.0878 and 40.0879.

Specify the outcome of Phase IV activities: (check one)

☑ a. Phase V Operation, Maintenance or Monitoring of the Comprehensive Remedial Action is necessary to achieve a Response Action Outcome.

☐ b. The requirements of a Class A Response Action Outcome have been met. No additional Operation, Maintenance or Monitoring is necessary to ensure the integrity of the Response Action Outcome. A completed Response Action Outcome Statement and Report (BWSC104) will be submitted to DEP.

☐ c. The requirements of a Class C Response Action Outcome have been met. No additional Operation, Maintenance or Monitoring is necessary to ensure the integrity of the Response Action Outcome. A completed Response Action Outcome Statement and Report (BWSC104) has been or will be submitted to DEP.

☐ d. The requirements of a Class C Response Action Outcome have been met. Further Operation, Maintenance or Monitoring of the remedial action is necessary to ensure that conditions are maintained and that further progress is made toward a Permanent Solution. A completed Response Action Outcome Statement and Report (BWSC104) has been or will be submitted to DEP.

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108

COMPREHENSIVE RESPONSE ACTION TRANSMITTAL FORM & PHASE I COMPLETION STATEMENT
Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

Release Tracking Number
3 - 23246

B. THIS FORM IS BEING USED TO (cont.):(check all that apply)

☐ 14. Submit a **Revised Phase IV Completion Statement**, pursuant to 310 CMR 40.0878 and 40.0879.

☐ 15. Submit a **Phase V Status Report**, pursuant to 310 CMR 40.0892.

☑ 16. Submit a **Remedial Monitoring Report**. (This report can only be submitted through eDEP.)

a. Type of Report: (check one) ☐ i. Initial Report ☑ ii. Interim Report ☐ iii. Final Report

b. Frequency of Submittal: (check all that apply)

- ☐ i. A Remedial Monitoring Report(s) submitted monthly to address an Imminent Hazard.
- ☐ ii. A Remedial Monitoring Report(s) submitted monthly to address a Condition of Substantial Release Migration.
- ☑ iii. A Remedial Monitoring Report(s) submitted concurrent with a Status Report.

c. Status of Site: (check one) ☐ i. Phase IV ☑ ii. Phase V ☐ iii. Remedy Operation Status ☐ iv. Class C RAO

d. Number of Remedial Systems and/or Monitoring Programs: 5

A separate BWSC108A, CRA Remedial Monitoring Report, must be filled out for each Remedial System and/or Monitoring Program addressed by this transmittal form.

☑ 17. Submit a **Remedy Operation Status**, pursuant to 310 CMR 40.0893.

☐ 18. Submit a **Status Report to maintain a Remedy Operation Status**, pursuant to 310 CMR 40.0893(2).

☐ 19. Submit a **Transfer and/or a Modification of Persons Maintaining a Remedy Operation Status (ROS)** , pursuant to 310 CMR 40.0893(5) (check one, or both, if applicable).

☐ a. Submit a Transfer of Persons Maintaining an ROS (the transferee should be the person listed in Section D, "Person Undertaking Response Actions").

☐ b. Submit a Modification of Persons Maintaining an ROS (the primary representative should be the person listed in Section D, "Person Undertaking Response Actions").

c. Number of Persons Maintaining an ROS not including the primary representative: ______

☐ 20. Submit a **Termination of a Remedy Operation Status**, pursuant to 310 CMR 40.0893(6).(check one)

☐ a. Submit a notice indicating ROS performance standards have not been met. A plan and timetable pursuant to 310 CMR 40.0893(6)(b) for resuming the ROS are attached.

☐ b. Submit a notice of Termination of ROS.

☐ 21. Submit a **Phase V Completion Statement**, pursuant to 310 CMR 40.0894.

Specify the outcome of Phase V activities: (check one)

☐ a. The requirements of a Class A Response Action Outcome have been met. No additional Operation, Maintenance or Monitoring is necessary to ensure the integrity of the Response Action Outcome. A completed Response Action Outcome Statement (BWSC104) will be submitted to DEP.

☐ b. The requirements of a Class C Response Action Outcome have been met. No additional Operation, Maintenance or Monitoring is necessary to ensure the integrity of the Response Action Outcome. A completed Response Action Outcome Statement and Report (BWSC104) will be submitted to DEP.

☐ c. The requirements of a Class C Response Action Outcome have been met. Further Operation, Maintenance or Monitoring of the remedial action is necessary to ensure that conditions are maintained and/or that further progress is made toward a Permanent Solution. A completed Response Action Outcome Statement and Report (BWSC104) will be submitted to DEP.

☐ 22. Submit a **Revised Phase V Completion Statement**, pursuant to 310 CMR 40.0894.

☐ 23. Submit a **Post-Class C Response Action Outcome Status Report**, pursuant to 310 CMR 40.0898.

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108

COMPREHENSIVE RESPONSE ACTION TRANSMITTAL FORM & PHASE I COMPLETION STATEMENT

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

Release Tracking Number
3 - 23246

C. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

> *if Section B indicates that a* ***Phase I, Phase II, Phase III, Phase IV or Phase V Completion Statement*** *and/or a* ***Termination of a Remedy Operation Status*** *is being submitted*, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> *if Section B indicates that a* ***Phase II Scope of Work*** *or a* ***Phase IV Remedy Implementation Plan*** *is being submitted*, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> *if Section B indicates that an* ***As-Built Construction Report****, a* ***Remedy Operation Status****, a* ***Phase IV, Phase V or Post-Class C RAO Status Report****, a* ***Status Report to Maintain a Remedy Operation Status****, a* ***Transfer or Modification of Persons Maintaining a Remedy Operation Status*** *and/or a* ***Remedial Monitoring Report*** *is being submitted*, the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #: 9719
2. First Name: ILEEN S
3. Last Name: GLADSTONE
4. Telephone: (781) 721-4012
5. Ext.:
6. FAX:
7. Signature: ILEEN S GLADSTONE
8. Date: 8/4/2011 (mm/dd/yyyy)
9. LSP Stamp: Commonwealth of Massachusetts Electronic Seal Licensed Site Professional

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108

COMPREHENSIVE RESPONSE ACTION TRANSMITTAL FORM & PHASE I COMPLETION STATEMENT

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

Release Tracking Number
3 - 23246

D. PERSON UNDERTAKING RESPONSE ACTIONS:

1. Check all that apply: ☐ a. change in contact name ☐ b. change of address ☐ c. change in the person undertaking response actions
2. Name of Organization: UNIFIRST CORPORATION
3. Contact First Name: JOHN R
4. Last Name: BADEY
5. Street: 68 JONSPIN RD
6. Title: VICE PRESIDENT
7. City/Town: WILMINGTON
8. State: MA
9. ZIP Code: 01887-1090
10. Telephone: (978) 658-8888
11. Ext.: 645
12. FAX: (978) 988-1305

E. RELATIONSHIP TO SITE OF PERSON UNDERTAKING RESPONSE ACTIONS:

☐ Check here to change relationship

☑ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter

☑ e. Other RP or PRP Specify: OTHER PRPS

☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ 4. Any Other Person Undertaking Response Actions Specify Relationship:

F. REQUIRED ATTACHMENT AND SUBMITTALS:

☐ 1. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.

☑ 2. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the submittal of any Phase Reports to DEP.

☑ 3. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the availability of a Phase III Remedial Action Plan.

☑ 4. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the availability of a Phase IV Remedy Implementation Plan.

☑ 5. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of any field work involving the implementation of a Phase IV Remedial Action.

☐ 6. If submitting a Transfer of a Remedy Operation Status (as per 310 CMR 40.0893(5)), check here to certify that a statement detailing the compliance history for the person making this submittal (transferee) is attached.

☐ 7. If submitting a Modification of a Remedy Operation Status (as per 310 CMR 40.0893(5)), check here to certify that a statement detailing the compliance history for each new person making this submittal is attached.

☐ 8. Check here if any non-updatable information provided on this form is incorrect, e.g. Site Name. Send corrections to: BWSC.eDEP@state.ma.us.

☑ 9. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108

COMPREHENSIVE RESPONSE ACTION TRANSMITTAL FORM & PHASE I COMPLETION STATEMENT

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

Release Tracking Number 3 - 23246

G. CERTIFICATION OF PERSON UNDERTAKING RESPONSE ACTIONS:

1. I, JOHN R. BADEY, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

>*if Section B indicates that this is a* **Modification of a Remedy Operation Status (ROS)**, I attest under the pains and penalties of perjury that I am fully authorized to act on behalf of all persons performing response actions under the ROS as stated in 310 CMR 40.0893(5)(d) to receive oral and written correspondence from MassDEP with respect to performance of response actions under the ROS, and to receive a statement of fee amount as per 4.03(3).

I understand that any material received by the Primary Representative from MassDEP shall be deemed received by all the persons perform ing response actions under the ROS, and I am aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate or incomplete information.

2. By: JOHN R. BADEY
Signature

3. Title: VICE PRESIDENT

4. For: UNIFIRST CORPORATION
(Name of person or entity recorded in Section D)

5. Date: 8/4/2011
(mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section D.

7. Street:

8. City/Town:

9. State:

10. ZIP Code:

11. Telephone:

12. Ext.:

13. FAX:

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO $10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

Date Stamp (DEP USE ONLY:)

Received by DEP on

8/4/2011 3:20:25 PM

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108 A

CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number: 3 - 23246

Remedial System or Monitoring Program: 1 of: 5

A. DESCRIPTION OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM:

1. Type of Active Remedial System or Active Remedial Monitoring Program: (check all that apply)

☑ a. Active Remedial System: (check all that apply)

☐ i. NAPL Recovery ☐ ii. Soil Vapor Extraction/Bioventing ☐ iii. Vapor-phase Carbon Adsorption
☐ iv. Groundwater Recovery ☐ v. Dual/Multi-phase Extraction ☐ vi. Aqueous-phase Carbon Adsorption
☐ vii. Air Stripping ☐ viii. Sparging/Biosparging ☐ ix. Cat/Thermal Oxidation
☑ x. Other Describe: SUB-SLAB DEPRESSURIZATION SYSTEM

☐ b. Application of Remedial Additives: (check all that apply)

☐ i. To the Subsurface ☐ ii. To Groundwater (Injection) ☐ iii. To the Surface

☐ c. Active Remedial Monitoring Program Without the Application of Remedial Additives: (check all that apply; Sections C, D and E are not required; attach supporting information, data, maps and/or sketches needed by checking Section F5)

☐ i. Reactive Wall ☐ ii. Natural Attenuation ☐ iii. Other Describe:

2. Mode of Operation: (check one)

☑ a. Continuous ☐ b. Intermittent ☐ c. Pulsed ☐ d. One-time Event Only ☐ e. Other:

3. System Effluent/Discharge: (check all that apply)

☐ a. Sanitary Sewer/POTW
☐ b. Groundwater Re-infiltration/Re-injection: (check one) ☐ i. Downgradient ☐ ii. Upgradient
☑ c. Vapor-phase Discharge to Ambient Air: (check one) ☑ i. Off-gas Controls ☐ ii. No Off-gas Controls
☐ d. Drinking Water Supply
☐ e. Surface Water (including Storm Drains)
☐ f. Other Describe:

B. MONITORING FREQUENCY:

1. Reporting period that is the subject of this submittal: From: 12/16/2010 (mm/dd/yyyy) To: 06/15/2011 (mm/dd/yyyy)

2. Number of monitoring events during the reporting period: (check one)

☐ a. System Startup: (if applicable)
☐ i. Days 1, 3, 6, and then weekly thereafter, for the first month.
☐ ii. Other Describe:

☑ b. Post-system Startup (after first month) or Monitoring Program:
☐ i. Monthly
☐ ii. Quarterly
☑ iii. Other Describe: TOTAL VOCS, ~MONTHLY

☑ 3. Check here to certify that the number of required monitoring events were conducted during the reporting period.

C. EFFLUENT/DISCHARGE REGULATION: (check one to indicate how the effluent/discharge limits were established)

☐ 1. NPDES: (check one) ☐ a. Remediation General Permit ☐ b. Individual Permit
☐ c. Emergency Exclusion Effective Date of Permit: (mm/dd/yyyy)

☑ 2. MCP Performance Standard MCP Citations(s): WSC-94-150

☐ 3. DEP Approval Letter Date of Letter: (mm/dd/yyyy)

☐ 4. Other Describe:

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108 A

CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Remedial System or Monitoring Program: 1 of: 5

Release Tracking Number 3 - 23246

D. WASTEWATER TREATMENT PLANT OPERATOR: (check one)

☐ 1. Required due to Remedial Wastewater Treatment Plant in place for more than 30 days.

a. Name: ______ b. Grade: ______

c. License No.: ______ d. License Exp. Date: ______ (mm/dd/yyyy)

☐ 2. Not Required

☑ 3. Not Applicable

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD: (check all that apply)

☑ 1. The Active Remedial System was functional one or more days during the Reporting Period.

a. Days System was Fully Functional: 182
b. GW Recovered (gals): ______
c. NAPL Recovered (gals): ______
d. GW Discharged (gals): ______
e. Avg. Soil Gas Recovery Rate (scfm): 176.20
f. Avg. Sparging Rate (scfm) : ______

☐ 2. Remedial Additives: (check all that apply)

☐ a. No Remedial Additives applied during the Reporting Period.

☐ b. Enhanced Bioremediation Additives applied: (total quantity applied at the site for the current reporting period)

☐ i. Nitrogen/Phosphorus:

Name of Additive	Date	Quantity	Units

☐ ii. Peroxides:

Name of Additive	Date	Quantity	Units

☐ iii. Microorganisms:

Name of Additive	Date	Quantity	Units

☐ iv. Other:

Name of Additive	Date	Quantity	Units

☐ c. Chemical oxidation/reduction additives applied: (total quantity applied at the site for the current reporting period)

☐ i. Permanganates:

Name of Additive	Date	Quantity	Units

☐ ii. Peroxides:

Name of Additive	Date	Quantity	Units

☐ iii. Persulfates:

Name of Additive	Date	Quantity	Units

☐ iv. Other:

Name of Additive	Date	Quantity	Units

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108A

CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number: 3 - 23246

Remedial System or Monitoring Program: 1 of: 5

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD: (cont.)

(check all that apply)

☐ d. Other additives applied: (total quantity applied at the site for the current reporting period)

Name of Additive	Date	Quantity	Units

Name of Additive	Date	Quantity	Units

☐ e. Check here if any additional Remedial Additives were applied. Attach list of additional additives and include Name of Additive, Date Applied, Quantity Applied and Units (in gals. or lbs.)

F. SHUTDOWNS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM: (check all that apply)

☑ 1. The Active Remedial System had unscheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Unscheduled Shutdowns: 4 b. Total Number of Days of Unscheduled Shutdowns: 4

c. Reason(s) for Unscheduled Shutdowns: REPAIR PVC PIPE AT BLOWER EFFLUENT ~1-HR PER EVENT

☑ 2. The Active Remedial System had scheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Scheduled Shutdowns: 1 b. Total Number of Days of Scheduled Shutdowns: 1

c. Reason(s) for Scheduled Shutdowns: CARBON CHANGE OUT; MODIFICATIONS AND REPAIRS OF SSDS/SVE SYSTEM

☐ 3. The Active Remedial System or Active Remedial Monitoring Program was permanently shutdown/discontinued during the Reporting Period.

a. Date of Final System or Monitoring Program Shutdown: (mm/dd/yyyy)

☐ b. No Further Effluent Discharges.

☐ c. No Further Application of Remedial Additives planned; sufficient monitoring completed to demonstrate compliance with 310 CMR 40.0046.

☐ d. No Further Submittals Planned.

☐ e. Other: Describe:

G. SUMMARY STATEMENTS: (check all that apply for the current reporting period)

☑ 1. All Active Remedial System checks and effluent analyses required by the approved plan and/or permit were performed when applicable.

☑ 2. There were no significant problems or prolonged (>25% of reporting period) unscheduled shutdowns of the Active Remedial System.

☑ 3. The Active Remedial System or Active Remedial Monitoring Program operated in conformance with the MCP, and all applicable approval conditions and/or permits.

4. Indicate any Operational Problems or Notes:

☐ 5. Check here if additional/supporting Information, data, maps, and/or sketches are attached to the form.

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108B

Release Tracking Number
3 - 23246

CRA REMEDIAL MONITORING REPORT
EFFLUENT/DISCHARGE CONCENTRATIONS

Pursuant to 310 CMR 40.0800 (SUBPART H)

Remedial System or Monitoring Program: 1 of: 5

For each Point of Measurement, indicate the highest concentration detected during the reporting period, of each oil, hazardous material and/or remedial additive.

Point of Measurement	Date (mm/dd/yyyy)	Contaminant, Measurement and/or Indicator Parameter	Influent Concentraion (where applicable)	Midpoint Concentration (where applicable)	(check one) ☑ Discharge ☐ Groundwater Concentration	Check here, if ND/BDL	Permissible Concentration	Units	Within Permissible Limits? (Y/N)
SSDS	01/05/2011	TOTAL VOCS	8.000			☑	0.400	PPM	Yes
SSDS	03/02/2011	TOTAL VOCS	4.600			☑	0.230	PPM	Yes
SSDS	03/18/2011	TOTAL VOCS	5.200			☑	0.260	PPM	Yes
SSDS	04/05/2011	TOTAL VOCS	9.100			☑	0.455	PPM	Yes
SSDS	05/02/2011	TOTAL VOCS	11.000			☑	0.550	PPM	Yes
SSDS	06/13/2011	TOTAL VOCS	17.300			☑	0.865	PPM	Yes
						☐			
						☐			
						☐			
						☐			
						☐			
						☐			
						☐			
						☐			
						☐			
						☐			
						☐			
						☐		MG/KG	
						☐			
						☐			

☐ Check here if an additional BWSC108B, Effluent/Discharge Concentrations Form, is needed.

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108 A

CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number 3 - 23246

Remedial System or Monitoring Program: 2 of: 5

A. DESCRIPTION OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM:

1. Type of Active Remedial System or Active Remedial Monitoring Program: (check all that apply)
   - ☑ a. Active Remedial System: (check all that apply)
     - ☐ i. NAPL Recovery
     - ☑ ii. Soil Vapor Extraction/Bioventing
     - ☐ iii. Vapor-phase Carbon Adsorption
     - ☐ iv. Groundwater Recovery
     - ☐ v. Dual/Multi-phase Extraction
     - ☐ vi. Aqueous-phase Carbon Adsorption
     - ☐ vii. Air Stripping
     - ☐ viii. Sparging/Biosparging
     - ☐ ix. Cat/Thermal Oxidation
     - ☐ x. Other Describe:
   - ☐ b. Application of Remedial Additives: (check all that apply)
     - ☐ i. To the Subsurface
     - ☐ ii. To Groundwater (Injection)
     - ☐ iii. To the Surface
   - ☐ c. Active Remedial Monitoring Program Without the Application of Remedial Additives: (check all that apply; Sections C, D and E are not required; attach supporting information, data, maps and/or sketches needed by checking Section F5)
     - ☐ i. Reactive Wall
     - ☐ ii. Natural Attenuation
     - ☐ iii. Other Describe:

2. Mode of Operation: (check one)
   ☑ a. Continuous ☐ b. Intermittent ☐ c. Pulsed ☐ d. One-time Event Only ☐ e. Other:

3. System Effluent/Discharge: (check all that apply)
   - ☐ a. Sanitary Sewer/POTW
   - ☐ b. Groundwater Re-infiltration/Re-injection: (check one) ☐ i. Downgradient ☐ ii. Upgradient
   - ☑ c. Vapor-phase Discharge to Ambient Air: (check one) ☑ i. Off-gas Controls ☐ ii. No Off-gas Controls
   - ☐ d. Drinking Water Supply
   - ☐ e. Surface Water (including Storm Drains)
   - ☐ f. Other Describe:

B. MONITORING FREQUENCY:

1. Reporting period that is the subject of this submittal: From: 12/16/2010 (mm/dd/yyyy) To: 06/15/2011 (mm/dd/yyyy)

2. Number of monitoring events during the reporting period: (check one)
   - ☐ a. System Startup: (if applicable)
     - ☐ i. Days 1, 3, 6, and then weekly thereafter, for the first month.
     - ☐ ii. Other Describe:
   - ☑ b. Post-system Startup (after first month) or Monitoring Program:
     - ☐ i. Monthly
     - ☐ ii. Quarterly
     - ☑ iii. Other Describe: TOTAL VOCS, ~MONTHLY

☑ 3. Check here to certify that the number of required monitoring events were conducted during the reporting period.

C. EFFLUENT/DISCHARGE REGULATION: (check one to indicate how the effluent/discharge limits were established)

☐ 1. NPDES: (check one) ☐ a. Remediation General Permit ☐ b. Individual Permit ☐ c. Emergency Exclusion Effective Date of Permit: (mm/dd/yyyy)

☑ 2. MCP Performance Standard MCP Citations(s): WSC-94-150

☐ 3. DEP Approval Letter Date of Letter: (mm/dd/yyyy)

☐ 4. Other Describe:

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108A

CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Remedial System or Monitoring Program: 2 of: 5

Release Tracking Number
3 - 23246

D. WASTEWATER TREATMENT PLANT OPERATOR: (check one)

☐ 1. Required due to Remedial Wastewater Treatment Plant in place for more than 30 days.

a. Name:
b. Grade:
c. License No.:
d. License Exp. Date: (mm/dd/yyyy)

☐ 2. Not Required

☑ 3. Not Applicable

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD: (check all that apply)

☑ 1. The Active Remedial System was functional one or more days during the Reporting Period.

a. Days System was Fully Functional: 182
b. GW Recovered (gals):
c. NAPL Recovered (gals):
d. GW Discharged (gals):
e. Avg. Soil Gas Recovery Rate (scfm): 176.20
f. Avg. Sparging Rate (scfm) :

☐ 2. Remedial Additives: (check all that apply)

☐ a. No Remedial Additives applied during the Reporting Period.

☐ b. Enhanced Bioremediation Additives applied: (total quantity applied at the site for the current reporting period)

☐ i. Nitrogen/Phosphorus:

Name of Additive	Date	Quantity	Units

☐ ii. Peroxides:

Name of Additive	Date	Quantity	Units

☐ iii. Microorganisms:

Name of Additive	Date	Quantity	Units

☐ iv. Other:

Name of Additive	Date	Quantity	Units

☐ c. Chemical oxidation/reduction additives applied: (total quantity applied at the site for the current reporting period)

☐ i. Permanganates:

Name of Additive	Date	Quantity	Units

☐ ii. Peroxides:

Name of Additive	Date	Quantity	Units

☐ iii. Persulfates:

Name of Additive	Date	Quantity	Units

☐ iv. Other:

Name of Additive	Date	Quantity	Units

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108A

CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number 3 - 23246

Remedial System or Monitoring Program: 2 of: 5

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD: (cont.) (check all that apply)

☐ d. Other additives applied: (total quantity applied at the site for the current reporting period)

Name of Additive	Date	Quantity	Units

Name of Additive	Date	Quantity	Units

☐ e. Check here if any additional Remedial Additives were applied. Attach list of additional additives and include Name of Additive, Date Applied, Quantity Applied and Units (in gals. or lbs.)

F. SHUTDOWNS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM: (check all that apply)

☑ 1. The Active Remedial System had unscheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Unscheduled Shutdowns: 4 b. Total Number of Days of Unscheduled Shutdowns: 4

c. Reason(s) for Unscheduled Shutdowns: REPAIR PVC PIPE AT BLOWER EFFLUENT ~1-HR PER EVENT

☑ 2. The Active Remedial System had scheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Scheduled Shutdowns: 1 b. Total Number of Days of Scheduled Shutdowns: 1

c. Reason(s) for Scheduled Shutdowns: CARBON CHANGE OUT; MODIFICATIONS AND REPAIRS OF SSDS/SVE SYSTEM

☐ 3. The Active Remedial System or Active Remedial Monitoring Program was permanently shutdown/discontinued during the Reporting Period.

a. Date of Final System or Monitoring Program Shutdown: (mm/dd/yyyy)

☐ b. No Further Effluent Discharges.

☐ c. No Further Application of Remedial Additives planned; sufficient monitoring completed to demonstrate compliance with 310 CMR 40.0046.

☐ d. No Further Submittals Planned.

☐ e. Other: Describe:

G. SUMMARY STATEMENTS: (check all that apply for the current reporting period)

☑ 1. All Active Remedial System checks and effluent analyses required by the approved plan and/or permit were performed when applicable.

☑ 2. There were no significant problems or prolonged (>25% of reporting period) unscheduled shutdowns of the Active Remedial System.

☑ 3. The Active Remedial System or Active Remedial Monitoring Program operated in conformance with the MCP, and all applicable approval conditions and/or permits.

4. Indicate any Operational Problems or Notes:

☐ 5. Check here if additional/supporting Information, data, maps, and/or sketches are attached to the form.

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108 B

Release Tracking Number
3 - 23246

CRA REMEDIAL MONITORING REPORT
EFFLUENT/DISCHARGE CONCENTRATIONS

Pursuant to 310 CMR 40.0800 (SUBPART H)

Remedial System or Monitoring Program: 2 of: 5

For each Point of Measurement, indicate the highest concentration detected during the reporting period, of each oil, hazardous material and/or remedial additive.

Point of Measurement	Date (mm/dd/yyyy)	Contaminant, Measurement and/or Indicator Parameter	Influent Concentraion (where applicable)	Midpoint Concentration (where applicable)	(check one) ☑ Discharge ☐ Groundwater Concentration	Check here, if ND/BDL	Permissible Concentration	Units	Within Permissible Limits? (Y/N)
SVE	01/05/2011	TOTAL VOCS	8.000			☑	0.400	PPM	Yes
SVE	03/02/2011	TOTAL VOCS	4.600			☑	0.230	PPM	Yes
SVE	03/18/2011	TOTAL VOCS	5.200			☑	0.260	PPM	Yes
SVE	04/05/2011	TOTAL VOCS	9.100			☑	0.455	PPM	Yes
SVE	05/02/2011	TOTAL VOCS	11.000			☑	0.550	PPM	Yes
SVE	06/13/2011	TOTAL VOCS	17.300			☑	0.865	PPM	Yes
						☐			
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						☐			
						☐			
						☐			
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						☐			
						☐			
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						☐		MG/KG	
						☐			
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☐ Check here if an additional BWSC108B, Effluent/Discharge Concentrations Form, is needed.

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108 A

CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number: 3 - 23246

Remedial System or Monitoring Program: 3 of: 5

A. DESCRIPTION OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM:

1. Type of Active Remedial System or Active Remedial Monitoring Program: (check all that apply)
   - ☑ a. Active Remedial System: (check all that apply)
     - ☐ i. NAPL Recovery ☐ ii. Soil Vapor Extraction/Bioventing ☐ iii. Vapor-phase Carbon Adsorption
     - ☐ iv. Groundwater Recovery ☐ v. Dual/Multi-phase Extraction ☐ vi. Aqueous-phase Carbon Adsorption
     - ☐ vii. Air Stripping ☐ viii. Sparging/Biosparging ☐ ix. Cat/Thermal Oxidation
     - ☑ x. Other Describe: SUB-SLAB DEPRESSURIZATION SYSTEM
   - ☐ b. Application of Remedial Additives: (check all that apply)
     - ☐ i. To the Subsurface ☐ ii. To Groundwater (Injection) ☐ iii. To the Surface
   - ☐ c. Active Remedial Monitoring Program Without the Application of Remedial Additives: (check all that apply; Sections C, D and E are not required; attach supporting information, data, maps and/or sketches needed by checking Section F5)
     - ☐ i. Reactive Wall ☐ ii. Natural Attenuation ☐ iii. Other Describe: ____
2. Mode of Operation: (check one)
   - ☑ a. Continuous ☐ b. Intermittent ☐ c. Pulsed ☐ d. One-time Event Only ☐ e. Other: ____
3. System Effluent/Discharge: (check all that apply)
   - ☐ a. Sanitary Sewer/POTW
   - ☐ b. Groundwater Re-infiltration/Re-injection: (check one) ☐ i. Downgradient ☐ ii. Upgradient
   - ☑ c. Vapor-phase Discharge to Ambient Air: (check one) ☐ i. Off-gas Controls ☑ ii. No Off-gas Controls
   - ☐ d. Drinking Water Supply
   - ☐ e. Surface Water (including Storm Drains)
   - ☐ f. Other Describe: ____

B. MONITORING FREQUENCY:

1. Reporting period that is the subject of this submittal: From: 12/16/2010 (mm/dd/yyyy) To: 06/15/2011 (mm/dd/yyyy)
2. Number of monitoring events during the reporting period: (check one)
   - ☐ a. System Startup: (if applicable)
     - ☐ i. Days 1, 3, 6, and then weekly thereafter, for the first month.
     - ☐ ii. Other Describe: ____
   - ☑ b. Post-system Startup (after first month) or Monitoring Program:
     - ☐ i. Monthly
     - ☐ ii. Quarterly
     - ☑ iii. Other Describe: TOTAL VOCS, MONTHLY

☑ 3. Check here to certify that the number of required monitoring events were conducted during the reporting period.

C. EFFLUENT/DISCHARGE REGULATION: (check one to indicate how the effluent/discharge limits were established)

☐ 1. NPDES: (check one) ☐ a. Remediation General Permit ☐ b. Individual Permit ☐ c. Emergency Exclusion Effective Date of Permit: ____ (mm/dd/yyyy)

☑ 2. MCP Performance Standard MCP Citations(s): WSC-94-150

☐ 3. DEP Approval Letter Date of Letter: ____ (mm/dd/yyyy)

☐ 4. Other Describe: ____

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108 A

CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number 3 - 23246

Remedial System or Monitoring Program: 3 of: 5

D. WASTEWATER TREATMENT PLANT OPERATOR: (check one)

☐ 1. Required due to Remedial Wastewater Treatment Plant in place for more than 30 days.

a. Name:
b. Grade:
c. License No.:
d. License Exp. Date: (mm/dd/yyyy)

☐ 2. Not Required

☑ 3. Not Applicable

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD: (check all that apply)

☑ 1. The Active Remedial System was functional one or more days during the Reporting Period.

a. Days System was Fully Functional: 182
b. GW Recovered (gals):
c. NAPL Recovered (gals):
d. GW Discharged (gals):
e. Avg. Soil Gas Recovery Rate (scfm): 128.00
f. Avg. Sparging Rate (scfm) :

☐ 2. Remedial Additives: (check all that apply)

☐ a. No Remedial Additives applied during the Reporting Period.

☐ b. Enhanced Bioremediation Additives applied: (total quantity applied at the site for the current reporting period)

☐ i. Nitrogen/Phosphorus:

Name of Additive	Date	Quantity	Units

☐ ii. Peroxides:

Name of Additive	Date	Quantity	Units

☐ iii. Microorganisms:

Name of Additive	Date	Quantity	Units

☐ iv. Other:

Name of Additive	Date	Quantity	Units

☐ c. Chemical oxidation/reduction additives applied: (total quantity applied at the site for the current reporting period)

☐ i. Permanganates:

Name of Additive	Date	Quantity	Units

☐ ii. Peroxides:

Name of Additive	Date	Quantity	Units

☐ iii. Persulfates:

Name of Additive	Date	Quantity	Units

☐ iv. Other:

Name of Additive	Date	Quantity	Units

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108A

CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number: 3 - 23246

Remedial System or Monitoring Program: 3 of: 5

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD: (cont.) (check all that apply)

☐ d. Other additives applied: (total quantity applied at the site for the current reporting period)

Name of Additive	Date	Quantity	Units	Name of Additive	Date	Quantity	Units

☐ e. Check here if any additional Remedial Additives were applied. Attach list of additional additives and include Name of Additive, Date Applied, Quantity Applied and Units (in gals. or lbs.)

F. SHUTDOWNS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM: (check all that apply)

☐ 1. The Active Remedial System had unscheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Unscheduled Shutdowns: b. Total Number of Days of Unscheduled Shutdowns:

c. Reason(s) for Unscheduled Shutdowns:

☐ 2. The Active Remedial System had scheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Scheduled Shutdowns: b. Total Number of Days of Scheduled Shutdowns:

c. Reason(s) for Scheduled Shutdowns:

☐ 3. The Active Remedial System or Active Remedial Monitoring Program was permanently shutdown/discontinued during the Reporting Period.

a. Date of Final System or Monitoring Program Shutdown: (mm/dd/yyyy)

☐ b. No Further Effluent Discharges.

☐ c. No Further Application of Remedial Additives planned; sufficient monitoring completed to demonstrate compliance with 310 CMR 40.0046.

☐ d. No Further Submittals Planned.

☐ e. Other: Describe:

G. SUMMARY STATEMENTS: (check all that apply for the current reporting period)

☑ 1. All Active Remedial System checks and effluent analyses required by the approved plan and/or permit were performed when applicable.

☑ 2. There were no significant problems or prolonged (>25% of reporting period) unscheduled shutdowns of the Active Remedial System.

☑ 3. The Active Remedial System or Active Remedial Monitoring Program operated in conformance with the MCP, and all applicable approval conditions and/or permits.

4. Indicate any Operational Problems or Notes:

☐ 5. Check here if additional/supporting Information, data, maps, and/or sketches are attached to the form.

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108 B

Release Tracking Number
3 - 23246

CRA REMEDIAL MONITORING REPORT
EFFLUENT/DISCHARGE CONCENTRATIONS

Pursuant to 310 CMR 40.0800 (SUBPART H)

Remedial System or Monitoring Program: 3 of: 5

For each Point of Measurement, indicate the highest concentration detected during the reporting period, of each oil, hazardous material and/or remedial additive.

Point of Measurement	Date (mm/dd/yyyy)	Contaminant, Measurement and/or Indicator Parameter	Influent Concentraion (where applicable)	Midpoint Concentration (where applicable)	(check one) ☑ Discharge ☐ Groundwater Concentration	Check here, if ND/BDL	Permissible Concentration	Units	Within Permissible Limits? (Y/N)
SSDS	12/30/2010	TOTAL VOCS	0.000			☑	8.000	PPMV	Yes
SSDS	01/24/2011	TOTAL VOCS	0.000			☑	8.000	PPMV	Yes
SSDS	02/11/2011	TOTAL VOCS	0.000			☑	8.000	PPMV	Yes
SSDS	03/17/2011	TOTAL VOCS	0.000			☑	8.000	PPMV	Yes
SSDS	04/25/2011	TOTAL VOCS	0.000			☑	8.000	PPMV	Yes
SSDS	05/31/2011	TOTAL VOCS	0.000			☑	8.000	PPMV	Yes
SSDS	06/13/2011	TOTAL VOCS	0.139			☑	8.000	PPMV	Yes
						☐			
						☐			
						☐			
						☐			
						☐			
						☐			
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						☐			
						☐			
						☐			
						☐		MG/KG	
						☐			
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☐ Check here if an additional BWSC108B, Effluent/Discharge Concentrations Form, is needed.

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108 A

CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number 3 - 23246

Remedial System or Monitoring Program: 4 of: 5

A. DESCRIPTION OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM:

1. Type of Active Remedial System or Active Remedial Monitoring Program: (check all that apply)

☑ a. Active Remedial System: (check all that apply)

☐ i. NAPL Recovery ☐ ii. Soil Vapor Extraction/Bioventing ☐ iii. Vapor-phase Carbon Adsorption
☐ iv. Groundwater Recovery ☐ v. Dual/Multi-phase Extraction ☐ vi. Aqueous-phase Carbon Adsorption
☐ vii. Air Stripping ☐ viii. Sparging/Biosparging ☐ ix. Cat/Thermal Oxidation
☑ x. Other Describe: SUB-SLAB DEPRESSURIZATION SYSTEM

☐ b. Application of Remedial Additives: (check all that apply)
☐ i. To the Subsurface ☐ ii. To Groundwater (Injection) ☐ iii. To the Surface

☐ c. Active Remedial Monitoring Program Without the Application of Remedial Additives: (check all that apply; Sections C, D and E are not required; attach supporting information, data, maps and/or sketches needed by checking Section F5)
☐ i. Reactive Wall ☐ ii. Natural Attenuation ☐ iii. Other Describe:

2. Mode of Operation: (check one)
☑ a. Continuous ☐ b. Intermittent ☐ c. Pulsed ☐ d. One-time Event Only ☐ e. Other:

3. System Effluent/Discharge: (check all that apply)
☐ a. Sanitary Sewer/POTW
☐ b. Groundwater Re-infiltration/Re-injection: (check one) ☐ i. Downgradient ☐ ii. Upgradient
☑ c. Vapor-phase Discharge to Ambient Air: (check one) ☐ i. Off-gas Controls ☑ ii. No Off-gas Controls
☐ d. Drinking Water Supply
☐ e. Surface Water (including Storm Drains)
☐ f. Other Describe:

B. MONITORING FREQUENCY:

1. Reporting period that is the subject of this submittal: From: 12/16/2010 (mm/dd/yyyy) To: 06/15/2011 (mm/dd/yyyy)

2. Number of monitoring events during the reporting period: (check one)
☐ a. System Startup: (if applicable)
☐ i. Days 1, 3, 6, and then weekly thereafter, for the first month.
☐ ii. Other Describe:
☑ b. Post-system Startup (after first month) or Monitoring Program:
☐ i. Monthly
☐ ii. Quarterly
☑ iii. Other Describe: ANNUALLY

☑ 3. Check here to certify that the number of required monitoring events were conducted during the reporting period.

C. EFFLUENT/DISCHARGE REGULATION: (check one to indicate how the effluent/discharge limits were established)

☐ 1. NPDES: (check one) ☐ a. Remediation General Permit ☐ b. Individual Permit
☐ c. Emergency Exclusion Effective Date of Permit: (mm/dd/yyyy)

☑ 2. MCP Performance Standard MCP Citations(s): WSC-94-150

☐ 3. DEP Approval Letter Date of Letter: (mm/dd/yyyy)

☐ 4. Other Describe:

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108 A

CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number: 3 - 23246

Remedial System or Monitoring Program: 4 of: 5

D. WASTEWATER TREATMENT PLANT OPERATOR: (check one)

☐ 1. Required due to Remedial Wastewater Treatment Plant in place for more than 30 days.

a. Name: b. Grade:

c. License No.: d. License Exp. Date: (mm/dd/yyyy)

☐ 2. Not Required

☑ 3. Not Applicable

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD:
(check all that apply)

☑ 1. The Active Remedial System was functional one or more days during the Reporting Period.

a. Days System was Fully Functional: 182
b. GW Recovered (gals):
c. NAPL Recovered (gals):
d. GW Discharged (gals):
e. Avg. Soil Gas Recovery Rate (scfm): 87.00
f. Avg. Sparging Rate (scfm) :

☐ 2. Remedial Additives: (check all that apply)

☐ a. No Remedial Additives applied during the Reporting Period.

☐ b. Enhanced Bioremediation Additives applied: (total quantity applied at the site for the current reporting period)

☐ i. Nitrogen/Phosphorus:

Name of Additive	Date	Quantity	Units

☐ ii. Peroxides:

Name of Additive	Date	Quantity	Units

☐ iii. Microorganisms:

Name of Additive	Date	Quantity	Units

☐ iv. Other:

Name of Additive	Date	Quantity	Units

☐ c. Chemical oxidation/reduction additives applied: (total quantity applied at the site for the current reporting period)

☐ i. Permanganates:

Name of Additive	Date	Quantity	Units

☐ ii. Peroxides:

Name of Additive	Date	Quantity	Units

☐ iii. Persulfates:

Name of Additive	Date	Quantity	Units

☐ iv. Other:

Name of Additive	Date	Quantity	Units

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108A

CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number: 3 - 23246

Remedial System or Monitoring Program: 4 of: 5

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD: (cont.) (check all that apply)

☐ d. Other additives applied: (total quantity applied at the site for the current reporting period)

Name of Additive	Date	Quantity	Units	Name of Additive	Date	Quantity	Units

☐ e. Check here if any additional Remedial Additives were applied. Attach list of additional additives and include Name of Additive, Date Applied, Quantity Applied and Units (in gals. or lbs.)

F. SHUTDOWNS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM: (check all that apply)

☐ 1. The Active Remedial System had unscheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Unscheduled Shutdowns: b. Total Number of Days of Unscheduled Shutdowns:

c. Reason(s) for Unscheduled Shutdowns:

☐ 2. The Active Remedial System had scheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Scheduled Shutdowns: b. Total Number of Days of Scheduled Shutdowns:

c. Reason(s) for Scheduled Shutdowns:

☐ 3. The Active Remedial System or Active Remedial Monitoring Program was permanently shutdown/discontinued during the Reporting Period.

a. Date of Final System or Monitoring Program Shutdown: (mm/dd/yyyy)

☐ b. No Further Effluent Discharges.

☐ c. No Further Application of Remedial Additives planned; sufficient monitoring completed to demonstrate compliance with 310 CMR 40.0046.

☐ d. No Further Submittals Planned.

☐ e. Other: Describe:

G. SUMMARY STATEMENTS: (check all that apply for the current reporting period)

☑ 1. All Active Remedial System checks and effluent analyses required by the approved plan and/or permit were performed when applicable.

☑ 2. There were no significant problems or prolonged (>25% of reporting period) unscheduled shutdowns of the Active Remedial System.

☑ 3. The Active Remedial System or Active Remedial Monitoring Program operated in conformance with the MCP, and all applicable approval conditions and/or permits.

4. Indicate any Operational Problems or Notes:

☐ 5. Check here if additional/supporting Information, data, maps, and/or sketches are attached to the form.

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108A

CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number: 3 - 23246

Remedial System or Monitoring Program: 5 of: 5

A. DESCRIPTION OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM:

1. Type of Active Remedial System or Active Remedial Monitoring Program: (check all that apply)

☐ a. Active Remedial System: (check all that apply)

☐ i. NAPL Recovery ☐ ii. Soil Vapor Extraction/Bioventing ☐ iii. Vapor-phase Carbon Adsorption
☐ iv. Groundwater Recovery ☐ v. Dual/Multi-phase Extraction ☐ vi. Aqueous-phase Carbon Adsorption
☐ vii. Air Stripping ☐ viii. Sparging/Biosparging ☐ ix. Cat/Thermal Oxidation
☐ x. Other Describe:

☐ b. Application of Remedial Additives: (check all that apply)

☐ i. To the Subsurface ☐ ii. To Groundwater (Injection) ☐ iii. To the Surface

☑ c. Active Remedial Monitoring Program Without the Application of Remedial Additives: (check all that apply; Sections C, D and E are not required; attach supporting information, data, maps and/or sketches needed by checking Section F5)

☐ i. Reactive Wall ☑ ii. Natural Attenuation ☐ iii. Other Describe:

2. Mode of Operation: (check one)

☐ a. Continuous ☐ b. Intermittent ☐ c. Pulsed ☐ d. One-time Event Only ☐ e. Other:

3. System Effluent/Discharge: (check all that apply)

☐ a. Sanitary Sewer/POTW
☐ b. Groundwater Re-infiltration/Re-injection: (check one) ☐ i. Downgradient ☐ ii. Upgradient
☐ c. Vapor-phase Discharge to Ambient Air: (check one) ☐ i. Off-gas Controls ☐ ii. No Off-gas Controls
☐ d. Drinking Water Supply
☐ e. Surface Water (including Storm Drains)
☐ f. Other Describe:

B. MONITORING FREQUENCY:

1. Reporting period that is the subject of this submittal: From: 12/16/2010 (mm/dd/yyyy) To: 06/15/2011 (mm/dd/yyyy)

2. Number of monitoring events during the reporting period: (check one)

☐ a. System Startup: (if applicable)

☐ i. Days 1, 3, 6, and then weekly thereafter, for the first month.
☐ ii. Other Describe:

☑ b. Post-system Startup (after first month) or Monitoring Program:

☐ i. Monthly
☐ ii. Quarterly
☑ iii. Other Describe: ANNUALLY

☑ 3. Check here to certify that the number of required monitoring events were conducted during the reporting period.

C. EFFLUENT/DISCHARGE REGULATION: (check one to indicate how the effluent/discharge limits were established)

☐ 1. NPDES: (check one) ☐ a. Remediation General Permit ☐ b. Individual Permit
☐ c. Emergency Exclusion Effective Date of Permit: (mm/dd/yyyy)

☐ 2. MCP Performance Standard MCP Citations(s):

☐ 3. DEP Approval Letter Date of Letter: (mm/dd/yyyy)

☐ 4. Other Describe:

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108 A

CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number 3 - 23246

Remedial System or Monitoring Program: 5 of: 5

D. WASTEWATER TREATMENT PLANT OPERATOR: (check one)

☐ 1. Required due to Remedial Wastewater Treatment Plant in place for more than 30 days.

a. Name:
b. Grade:
c. License No.:
d. License Exp. Date: (mm/dd/yyyy)

☐ 2. Not Required

☐ 3. Not Applicable

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD:
(check all that apply)

☐ 1. The Active Remedial System was functional one or more days during the Reporting Period.

a. Days System was Fully Functional: ______
b. GW Recovered (gals): ______
c. NAPL Recovered (gals): ______
d. GW Discharged (gals): ______
e. Avg. Soil Gas Recovery Rate (scfm): ______
f. Avg. Sparging Rate (scfm) : ______

☐ 2. Remedial Additives: (check all that apply)

☐ a. No Remedial Additives applied during the Reporting Period.

☐ b. Enhanced Bioremediation Additives applied: (total quantity applied at the site for the current reporting period)

☐ i. Nitrogen/Phosphorus:

Name of Additive	Date	Quantity	Units

☐ ii. Peroxides:

Name of Additive	Date	Quantity	Units

☐ iii. Microorganisms:

Name of Additive	Date	Quantity	Units

☐ iv. Other:

Name of Additive	Date	Quantity	Units

☐ c. Chemical oxidation/reduction additives applied: (total quantity applied at the site for the current reporting period)

☐ i. Permanganates:

Name of Additive	Date	Quantity	Units

☐ ii. Peroxides:

Name of Additive	Date	Quantity	Units

☐ iii. Persulfates:

Name of Additive	Date	Quantity	Units

☐ iv. Other:

Name of Additive	Date	Quantity	Units

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108A

CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number 3 - 23246

Remedial System or Monitoring Program: 5 of: 5

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD: (cont.) (check all that apply)

☐ d. Other additives applied: (total quantity applied at the site for the current reporting period)

Name of Additive	Date	Quantity	Units	Name of Additive	Date	Quantity	Units

☐ e. Check here if any additional Remedial Additives were applied. Attach list of additional additives and include Name of Additive, Date Applied, Quantity Applied and Units (in gals. or lbs.)

F. SHUTDOWNS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM: (check all that apply)

☐ 1. The Active Remedial System had unscheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Unscheduled Shutdowns: b. Total Number of Days of Unscheduled Shutdowns:

c. Reason(s) for Unscheduled Shutdowns:

☐ 2. The Active Remedial System had scheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Scheduled Shutdowns: b. Total Number of Days of Scheduled Shutdowns:

c. Reason(s) for Scheduled Shutdowns:

☐ 3. The Active Remedial System or Active Remedial Monitoring Program was permanently shutdown/discontinued during the Reporting Period.

a. Date of Final System or Monitoring Program Shutdown: (mm/dd/yyyy)

☐ b. No Further Effluent Discharges.

☐ c. No Further Application of Remedial Additives planned; sufficient monitoring completed to demonstrate compliance with 310 CMR 40.0046.

☐ d. No Further Submittals Planned.

☐ e. Other: Describe:

G. SUMMARY STATEMENTS: (check all that apply for the current reporting period)

☐ 1. All Active Remedial System checks and effluent analyses required by the approved plan and/or permit were performed when applicable.

☐ 2. There were no significant problems or prolonged (>25% of reporting period) unscheduled shutdowns of the Active Remedial System.

☐ 3. The Active Remedial System or Active Remedial Monitoring Program operated in conformance with the MCP, and all applicable approval conditions and/or permits.

4. Indicate any Operational Problems or Notes:

☑ 5. Check here if additional/supporting Information, data, maps, and/or sketches are attached to the form.

Additional supporting information for RMR BWSC108A for Remedial System 5 of 5 has been submitted on CD as part of the "Phase IV Final Inspection Report, Remedial Monitoring Report No. 15, and Phase V Remedy Operation Status Report, RTN 3-23246, 50 Tufts Street, Somerville, Massachusetts" dated August 4, 2011.

The "Phase IV Final Inspection Report, Remedial Monitoring Report No. 15, and Phase V Remedy Operation Status Report, RTN 3-23246, 50 Tufts Street, Somerville, Massachusetts" dated August 4, 2011, exceeds the eDEP file size limit of 30 MB.

The entire report has been submitted on CD with a Notification of a Non-eDEP Electronic Submittal Form (BWSC-125) to the Northeast Regional Office.

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Transaction Overview Trans# 390954 ID# 3-23246 BWSC108 Comp. Res. Action Transmittal Form & Phase I

Forms Attach Files Signature Receipt

Summary & Receipt

Print Receipt Exit

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DEP Transaction ID: 390954
Date and Time Submitted: 8/4/2011 3:20:25 PM
Other Email :

Form Name: BWSC108 Comp. Res. Action Transmittal Form & Phase I

RTN: 3-23246
Location: 50 TUFTS ST & PROP ACROSS THE ST
Address: 50 TUFTS ST, SOMERVILLE, 021454129

Person Making Submittal
UNIFIRST CORPORATION
JOHN R BADEY
68 JONSPIN RD
WILMINGTON, MA 018871090

LSP
LSP #: 9719
LSP Name: ILEEN S GLADSTONE

Person Making Certification
UNIFIRST CORPORATION
John R. Badey
UNIFIRST CORPORATION
John R. Badey

Additional Forms Submitted
✓ BWSC Remedial Monitoring Report ( )
✓ BWSC Remedial Monitoring Report ( )
✓ BWSC Remedial Monitoring Report ( )
✓ BWSC Remedial Monitoring Report ( )
✓ BWSC Remedial Monitoring Report ( )
✓ BWSC Remedial Monitoring Report B( )
✓ BWSC Remedial Monitoring Report B( )
✓ BWSC Remedial Monitoring Report B( )

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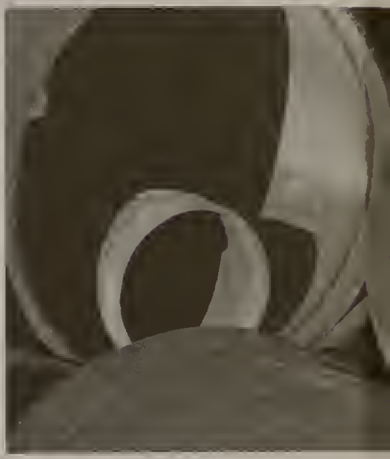
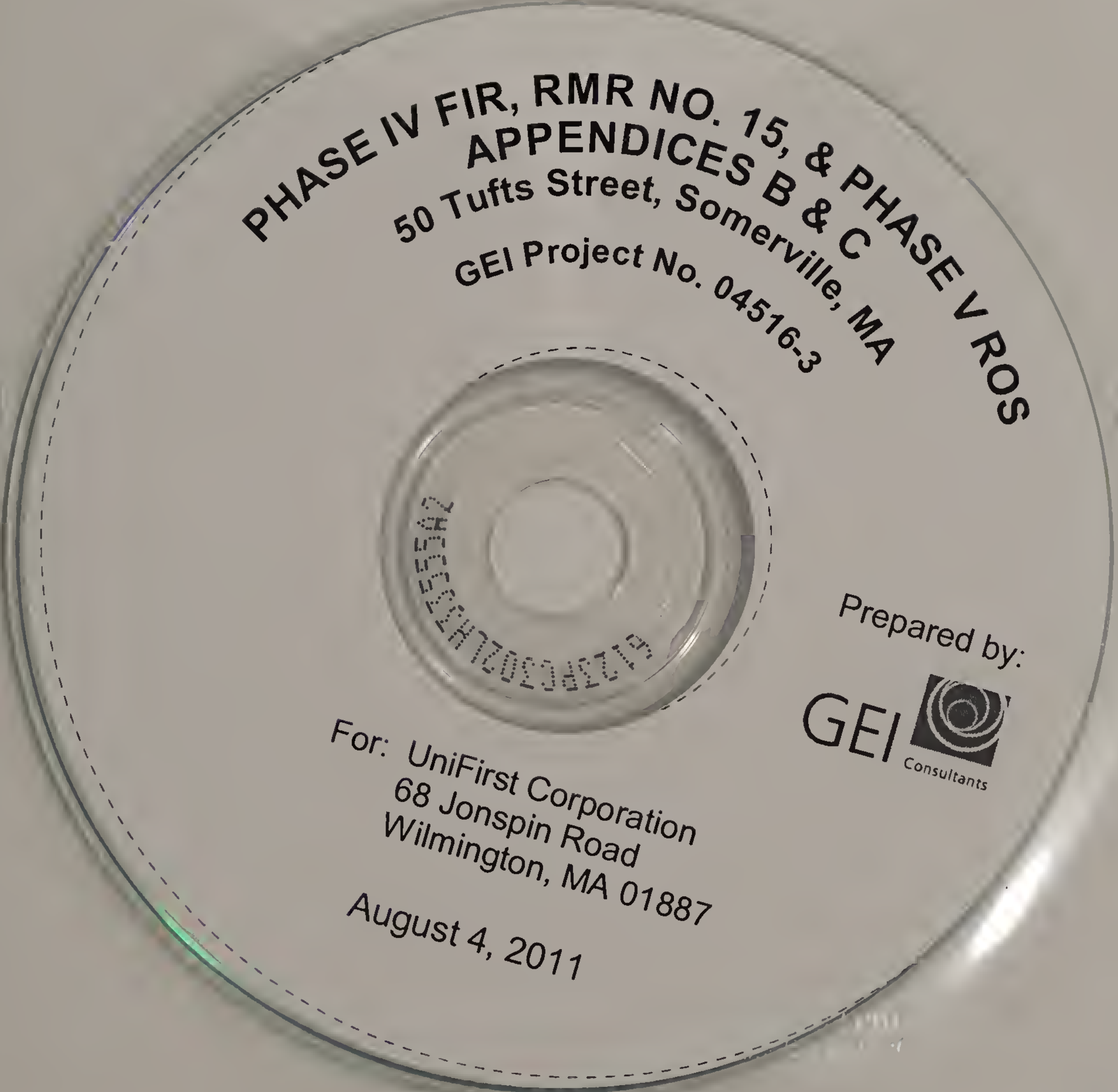


Appendix B (on enclosed CD)

Property Owner Notification Letters



PHASE IV FIR, RMR NO. 15, & PHASE V ROS
APPENDICES B & C

50 Tufts Street, Somerville, MA

GEI Project No. 04516-3

Prepared by:

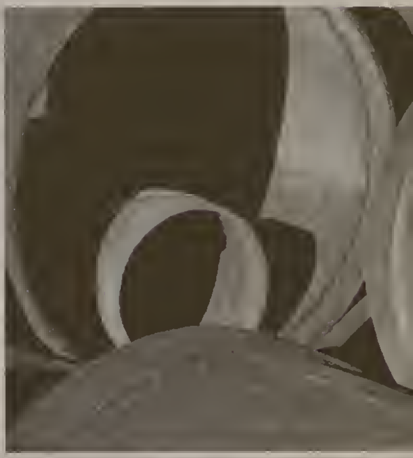
GEI Consultants

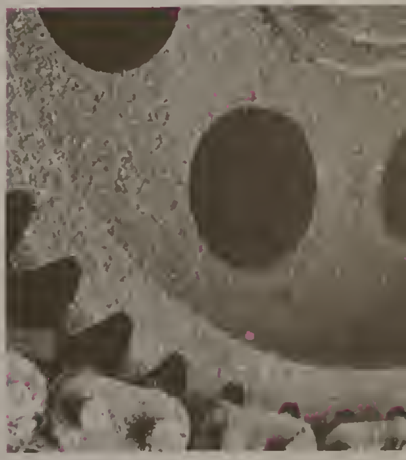
For: UniFirst Corporation
68 Jonspin Road
Wilmington, MA 01887

August 4, 2011

GEI Consultants

Geotechnical
Environmental
Water Resources
Ecological





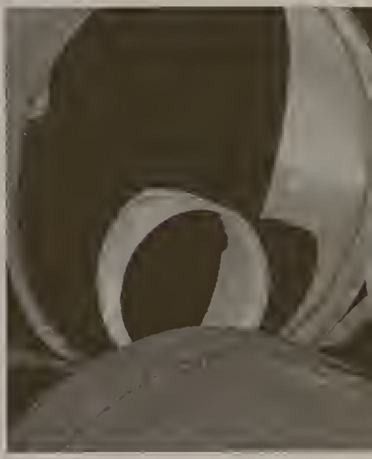
MassDEP RTN 3-23246
Phase IV Final Inspection Report, Remedial Monitoring
Report No. 15 and Phase V Remedy Operation Status Report
50 Tufts Street, Somerville, Massachusetts
UniFirst Corporation
August 4, 2011

Appendix C (on enclosed CD)

Laboratory Testing Reports

GEI Consultants

Geotechnical
Environmental
Water Resources
Ecological



Appendix D

Indoor Air Sampling Checklists and Photo Logs

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
10 Morton Street

Sample ID: **045163-10MORT-1**

Date:	**17-Dec-10**	Sample Type:	**Indoor**
Sampling Personel:	**N. Slagowski**	Analysis Method:	**TO-15**
Summa Canister ID:	**M006**	Sampling Start Time:	**8:27 AM**
Flow Regulator ID:	**MFC021**	Sampling Finish Time:	**8:10 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30***	**2**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**25.1**	**26.1**
Barometric Pressure (in. Hg):	**29.82**	**30.06**
Prevailing Wind Direction:	**W**	**NE**
General Weather Conditions:	**Sunny**	**Partly Cloudy**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**64.9**	**72.1**
Barometric Pressure (in. Hg):	**29.82**	**30.06**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **N. Slagowski**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event‘ **No**

Were any of the residents at home during sampling?**Yes**
If yes, provide detail:

Residents on first and second floors.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 12/18/10.

Air intake at **2' 10"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
10 Morton Street

Sample ID: **045163-10MORT-B**

Date:	**17-Dec-10**	Sample Type:	**Indoor**
Sampling Personel:	**N. Slagowski**	Analysis Method:	**TO-15**
Summa Canister ID:	**M125**	Sampling Start Time:	**8:23 AM**
Flow Regulator ID:	**MC141**	Sampling Finish Time:	**8:08 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**27**	**0**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**25.1**	**26.1**
Barometric Pressure (in. Hg):	**29.82**	**30.06**
Prevailing Wind Direction:	**W**	**NE**
General Weather Conditions:	**Sunny**	**Partly Cloudy**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**59.3**	**60.2**
Barometric Pressure (in. Hg):	**29.82**	**30.06**

Did Summa Canister go to ambient pressure? **Yes**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **N. Slagowski**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **No**

Were any of the residents at home during sampling?**Yes**
If yes, provide detail:

Residents on first and second floors

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 12/18/10. Documented some flakes in floor epoxy. When taking down sample, noticed a hole in the chimney from former duct.

Air intake at **3' 5"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

Air Sampling: 10 Morton Street (December 17 to 18, 2010)

045163-10MORT-1

045163-10MORT-B

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
95 Franklin Street

Sample ID: **045163-95FRAN-1**

Date:	**05-Jan-11**	Sample Type:	**Indoor**
Sampling Personel:	**N. Slagowski**	Analysis Method:	**TO-15**
Summa Canister ID:	**M038**	Sampling Start Time:	**8:00 AM**
Flow Regulator ID:	**MC094**	Sampling Finish Time:	**7:54 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30**	**1**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**27.9**	**22.5**
Barometric Pressure (in. Hg):	**29.7**	**29.7**
Prevailing Wind Direction:	**Calm**	**West**
General Weather Conditions:	**Sunny**	**Sunny**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**71.4**	**71.2**
Barometric Pressure (in. Hg):	**29.7**	**29.7**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **N. Slagowski**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **No**

Were any of the residents at home during sampling?**Yes**
If yes, provide detail:

Both residents present

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 1/6/11.

Air intake at **2' 11"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
95 Franklin Street

Sample ID: **045163-95FRAN-B**

Date:	**05-Jan-11**	Sample Type:	**Indoor**
Sampling Personel:	**N. Slagowski**	Analysis Method:	**TO-15**
Summa Canister ID:	**M150**	Sampling Start Time:	**8:05 AM**
Flow Regulator ID:	**MC084**	Sampling Finish Time:	**7:55 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**29.5**	**0**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**27.9**	**22.5**
Barometric Pressure (in. Hg):	**29.7**	**29.7**
Prevailing Wind Direction:	**Calm**	**West**
General Weather Conditions:	**Sunny**	**Sunny**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**59.3**	**59.5**
Barometric Pressure (in. Hg):	**29.7**	**29.7**

Did Summa Canister go to ambient pressure? **Yes**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **N. Slagowski**

Was the building aired out prior to sample collection? **No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **No**

Were any of the residents at home during sampling? **Yes**
If yes, provide detail:
Residents on first floor

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat
interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 1/6/11.

Air intake at **3' 6"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

Air Sampling: 95 Franklin Street (January 5 to 6, 2011)

045163-95FRAN-1

045163-95FRAN-B

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
13 Knowlton Street

Sample ID: **045163-13KNOW-1**

Date:	**31-Jan-11**	Sample Type:	**Indoor**
Sampling Personel:	**N. Slagowski**	Analysis Method:	**TO-15**
Summa Canister ID:	**M148**	Sampling Start Time:	**9:46 AM**
Flow Regulator ID:	**MC076**	Sampling Finish Time:	**9:36 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30***	**2**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**19.7**	**17.6**
Barometric Pressure (in. Hg):	**30.46**	**30.44**
Prevailing Wind Direction:	**NW**	**N**
General Weather Conditions:	**Sunny**	**Snow**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**71.6**	**65**
Barometric Pressure (in. Hg):	**30.46**	**30.44**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **N. Slagowski**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **No**

Were any of the residents at home during sampling?**Yes**
If yes, provide detail:

Residents on first floor

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat
interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 2/1/11.

Air intake at **3' 2"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
13 Knowlton Street

Sample ID: **045163-13KNOW-B**

Date:	**31-Jan-11**	Sample Type:	**Indoor**
Sampling Personel:	**N. Slagowski**	Analysis Method:	**TO-15**
Summa Canister ID:	**M147**	Sampling Start Time:	**9:36 AM**
Flow Regulator ID:	**MC096**	Sampling Finish Time:	**9:43 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30**	**2**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**19.7**	**17.6**
Barometric Pressure (in. Hg):	**30.46**	**30.44**
Prevailing Wind Direction:	**NW**	**N**
General Weather Conditions:	**Sunny**	**Snow**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**69.0**	**62**
Barometric Pressure (in. Hg):	**30.46**	**30.44**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **N. Slagowski**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **No**

Were any of the residents at home during sampling?**Yes**
If yes, provide detail:

Residents on first floor.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 2/1/11.

Air intake at **3' 10"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

Air Sampling: 13 Knowlton Street (January 31 to February 1, 2011)

045163-13KNOW-1

045163-13KNOW-B

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
91-93 Franklin Street

Sample ID: **045164-91-93FRAN-1**

Date:	**01-Feb-11**	Sample Type:	**Indoor**
Sampling Personel:	**N. Slagowski**	Analysis Method:	**TO-15**
Summa Canister ID:	**M146**	Sampling Start Time:	**5:55 PM**
Flow Regulator ID:	**MC093**	Sampling Finish Time:	**5:58 PM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**29.5**	**0**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**19.8**	**21.2**
Barometric Pressure (in. Hg):	**30.81**	**30.22**
Prevailing Wind Direction:	**NE**	**Calm**
General Weather Conditions:	**Snow**	**Sleet**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**68.5**	**70.5**
Barometric Pressure (in. Hg):	**30.81**	**30.22**

Did Summa Canister go to ambient pressure? **Yes**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **N. Slagowski**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **Yes**

Were any of the residents at home during sampling?**Yes**
If yes, provide detail:

Residents were present on first floor.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 2/2/11.

Air intake at **3' 1"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
91-93 Franklin Street

Sample ID: **045163-91-93FRAN-B**

Date:	**01-Feb-11**	Sample Type:	**Indoor**
Sampling Personel:	**N. Slagowski**	Analysis Method:	**TO-15**
Summa Canister ID:	**M057**	Sampling Start Time:	**5:57 PM**
Flow Regulator ID:	**MC019**	Sampling Finish Time:	**6:00 PM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30+**	**2**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**19.8**	**21.2**
Barometric Pressure (in. Hg):	**30.81**	**30.22**
Prevailing Wind Direction:	**NE**	**Calm**
General Weather Conditions:	**Snow**	**Sleet**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**52.8**	**53.7**
Barometric Pressure (in. Hg):	**30.81**	**30.22**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **N. Slagowski**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **Yes**

Were any of the residents at home during sampling?**No**
If yes, provide detail:

Residents were present on first floor.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 2/2/11.

Air intake at **3' 2"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

Air Sampling: 91-93 Franklin Street (February 1 to 2, 2011)

045163-91-93FRAN-1

045163-91-93FRAN-B

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
166-168 Glen Street, #1

Sample ID: **045163-166-168GLEN-1**

Date:	**03-Feb-11**	Sample Type:	**Indoor**
Sampling Personel:	**N. Slagowski**	Analysis Method:	**TO-15**
Summa Canister ID:	**M092**	Sampling Start Time:	**7:56 AM**
Flow Regulator ID:	**MC080**	Sampling Finish Time:	**8:05 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**29**	**0**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (℉):	**19.8**	**15.9**
Barometric Pressure (in. Hg):	**30.62**	**30.21**
Prevailing Wind Direction:	**Calm**	**Calm**
General Weather Conditions:	**Snow**	**Sunny**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (℉):	**73.0**	**71.6**
Barometric Pressure (in. Hg):	**30.62**	**30.21**

Did Summa Canister go to ambient pressure? **Yes**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **N. Slagowski**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **Yes**

Were any of the residents at home during sampling?**Yes**
If yes, provide detail:

Residents were present on first floor.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 2/4/11.

Air intake at **4' 3"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
166-168 Glen Street, #1

Sample ID: **045163-166-168GLEN-B**

Date:	**03-Feb-11**	Sample Type:	**Indoor**
Sampling Personel:	**N. Slagowski**	Analysis Method:	**TO-15**
Summa Canister ID:	**M227**	Sampling Start Time:	**7:58 AM**
Flow Regulator ID:	**MFC015**	Sampling Finish Time:	**8:06 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30***	**2**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**19.8**	**15.9**
Barometric Pressure (in. Hg):	**30.62**	**30.21**
Prevailing Wind Direction:	**Calm**	**Calm**
General Weather Conditions:	**Snow**	**Sunny**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**52.8**	**52.1**
Barometric Pressure (in. Hg):	**30.62**	**30.21**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **N. Slagowski**

Was the building aired out prior to sample collection? **No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **Yes**

Were any of the residents at home during sampling? **Yes**
If yes, provide detail:

Residents were present on first floor.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the data interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 2/4/11.

Air intake at **3' 9"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

Air Sampling: 166-168 Glen Street (February 3 to 4, 2011)

045163-166-168GLEN-1

045163-166-168GLEN-B

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
60 Tufts Street

Sample ID: **045163-60TUFTU1-1**

Date:	**04-Feb-11**	Sample Type:	**Indoor**
Sampling Personel:	**N. Slagowski**	Analysis Method:	**TO-15**
Summa Canister ID:	**M033**	Sampling Start Time:	**8:33 AM**
Flow Regulator ID:	**MFC036**	Sampling Finish Time:	**8:38 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30***	**0.5**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**15.9**	**25.9**
Barometric Pressure (in. Hg):	**30.21**	**30.51**
Prevailing Wind Direction:	**Calm**	**Calm**
General Weather Conditions:	**Sunny**	**Cloudy**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**68.3**	**67.8**
Barometric Pressure (in. Hg):	**30.21**	**30.51**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **N. Slagowski**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **Yes**

Were any of the residents at home during sampling?**Yes**
If yes, provide detail:
Residents present periodically during sample.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 2/5/11.

Air intake at **3' 1"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

Air Sampling: 60 Tufts Street, Unit 1 (February 4 to 5, 2011)

045163-60TUFTU1-1

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
60 Tufts Street, #4

Sample ID: **045163-60TUFTSU4-1**

Date:	**04-Feb-11**	Sample Type:	**Indoor**
Sampling Personel:	**N. Slagowski**	Analysis Method:	**TO-15**
Summa Canister ID:	**M018**	Sampling Start Time:	**8:55 AM**
Flow Regulator ID:	**MC026**	Sampling Finish Time:	**8:55 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30***	**1**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**15.9**	**25.9**
Barometric Pressure (in. Hg):	**30.21**	**30.51**
Prevailing Wind Direction:	**Calm**	**Calm**
General Weather Conditions:	**Sunny**	**Cloudy**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**69.2**	**70.3**
Barometric Pressure (in. Hg):	**30.21**	**30.51**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **N. Slagowski**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **Yes**

Were any of the residents at home during sampling?**Yes**
If yes, provide detail:

Resident present periodically during sampling.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 2/5/11.

Air intake at **4' 1"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
60 Tufts Street, #4

Sample ID: **045163-60TUFTU4-B**

Date:	**04-Feb-11**	Sample Type:	**Indoor**
Sampling Personel:	**N. Slagowski**	Analysis Method:	**TO-15**
Summa Canister ID:	**M127**	Sampling Start Time:	**8:59 AM**
Flow Regulator ID:	**MC144**	Sampling Finish Time:	**8:56 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**29.5**	**0**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**15.9**	**25.9**
Barometric Pressure (in. Hg):	**30.21**	**30.51**
Prevailing Wind Direction:	**Calm**	**Calm**
General Weather Conditions:	**Sunny**	**Cloudy**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**61.7**	**62.9**
Barometric Pressure (in. Hg):	**30.21**	**30.51**

Did Summa Canister go to ambient pressure? **Yes**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **N. Slagowski**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **Yes**

Were any of the residents at home during sampling?**Yes**
If yes, provide detail:

Resident present periodically during sampling.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 2/5/11.

Air intake at **2' 6"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

Air Sampling: 60 Tufts Street, Unit 4 (February 4 to 5, 2011)

045163-60TUFTU4-1

045163-60TUFTU4-B

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
162-164 Glen Street

Sample ID: **045163-162Glen-1**

Date:	**04-Feb-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M145**	Sampling Start Time:	**1:16 PM**
Flow Regulator ID:	**MC108**	Sampling Finish Time:	**5:40 PM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30**	**2**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**33.1**	**30.0**
Barometric Pressure (in. Hg):	**30.04**	**30.04**
Prevailing Wind Direction:	**SW**	**SW**
General Weather Conditions:	**Partly cloudy**	**Partly cloudy**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**64.0**	**68**
Barometric Pressure (in. Hg):	**NM**	**NM**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **No**

Were any of the residents at home during sampling?**Yes**
If yes, provide detail:

Homeowners were present.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

Air intake at **3' 10"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
162-164 Glen Street

Sample ID: **045163-162Glen-B**

Date:	**04-Feb-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M223**	Sampling Start Time:	**1:19 PM**
Flow Regulator ID:	**MC028**	Sampling Finish Time:	**5:41 PM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30***	**3**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**33.1**	**30.0**
Barometric Pressure (in. Hg):	**30.04**	**30.04**
Prevailing Wind Direction:	**SW**	**SW**
General Weather Conditions:	**Partly cloudy**	**Partly cloudy**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**57.9**	**56**
Barometric Pressure (in. Hg):	**NM**	**NM**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection? **No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **No**

Were any of the residents at home during sampling? **Yes**
If yes, provide detail:
Homeowners were present on the first floor.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

Air intake at 3' 7" above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

Air Sampling: 162-164 Glen Street (February 4, 2011)

045163-162GLEN-1

045163-162GLEN-B

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location: **27 Tufts Street**

Sample ID: **045163-27Tuft-1**

Date:	**23-Feb-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M104**	Sampling Start Time:	**10:09 AM**
Flow Regulator ID:	**MC069**	Sampling Finish Time:	**10:07 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30***	**12**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**28.9**	**34.0**
Barometric Pressure (in. Hg):	**30.26**	**30.25**
Prevailing Wind Direction:	**NW**	**SE**
General Weather Conditions:	**Sunny**	**Sunny**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**68.1**	**66.3**
Barometric Pressure (in. Hg):	**NM**	**30.18**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection? **No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **No**

Were any of the residents at home during sampling? **Yes**
If yes, provide detail:

Owners on the second floor--first floor is unoccupied.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the data interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 2/24/11. Homeowner had faucets in apartment on a trickle.

Air intake at **4'** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
27 Tufts Street

Sample ID: **045163-27Tuft-B**

Date:	**24-Feb-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M164**	Sampling Start Time:	**10:17 AM**
Flow Regulator ID:	**MC027**	Sampling Finish Time:	**10:11 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30**	**3**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**28.9**	**34.0**
Barometric Pressure (in. Hg):	**30.26**	**30.25**
Prevailing Wind Direction:	**NW**	**SE**
General Weather Conditions:	**Sunny**	**Sunny**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**60.8**	**62.6**
Barometric Pressure (in. Hg):	**NM**	**30.18**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **No**

Were any of the residents at home during sampling?**Yes**
If yes, provide detail:

Homeowners present on the top floor.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 2/24/11.

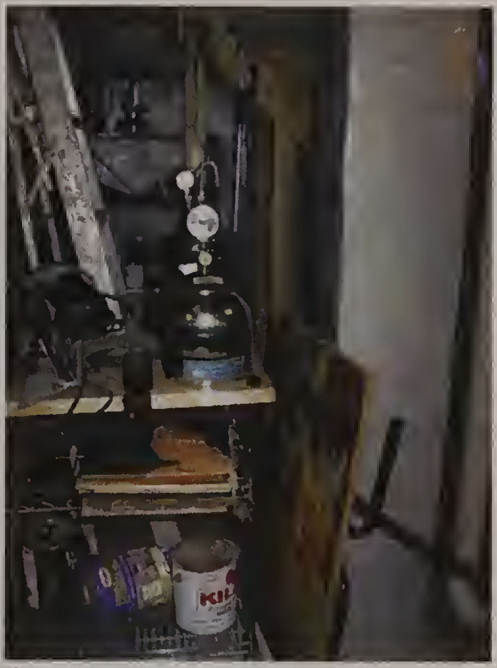
Air intake at **4' 4"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

Air Sampling: 27 Tufts Street (February 23 to 24, 2011)

045163-27Tuft-1



045163-27Tuft-B

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
18 Morton Street

Sample ID: **045163-18Mort-B**

Date:	**23-Feb-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M130**	Sampling Start Time:	**5:36 PM**
Flow Regulator ID:	**MC104**	Sampling Finish Time:	**6:01 PM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30**	**2**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**37.0**	**37.9**
Barometric Pressure (in. Hg):	**30.24**	**30.09**
Prevailing Wind Direction:	**NW**	**SW**
General Weather Conditions:	**Clear**	**Mostly cloudy**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**59.3**	**56.4**
Barometric Pressure (in. Hg):	**30.19**	**30.05**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection? **No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **No**

Were any of the residents at home during sampling? **Yes**
If yes, provide detail:

Tenants and homeowners on floors above.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

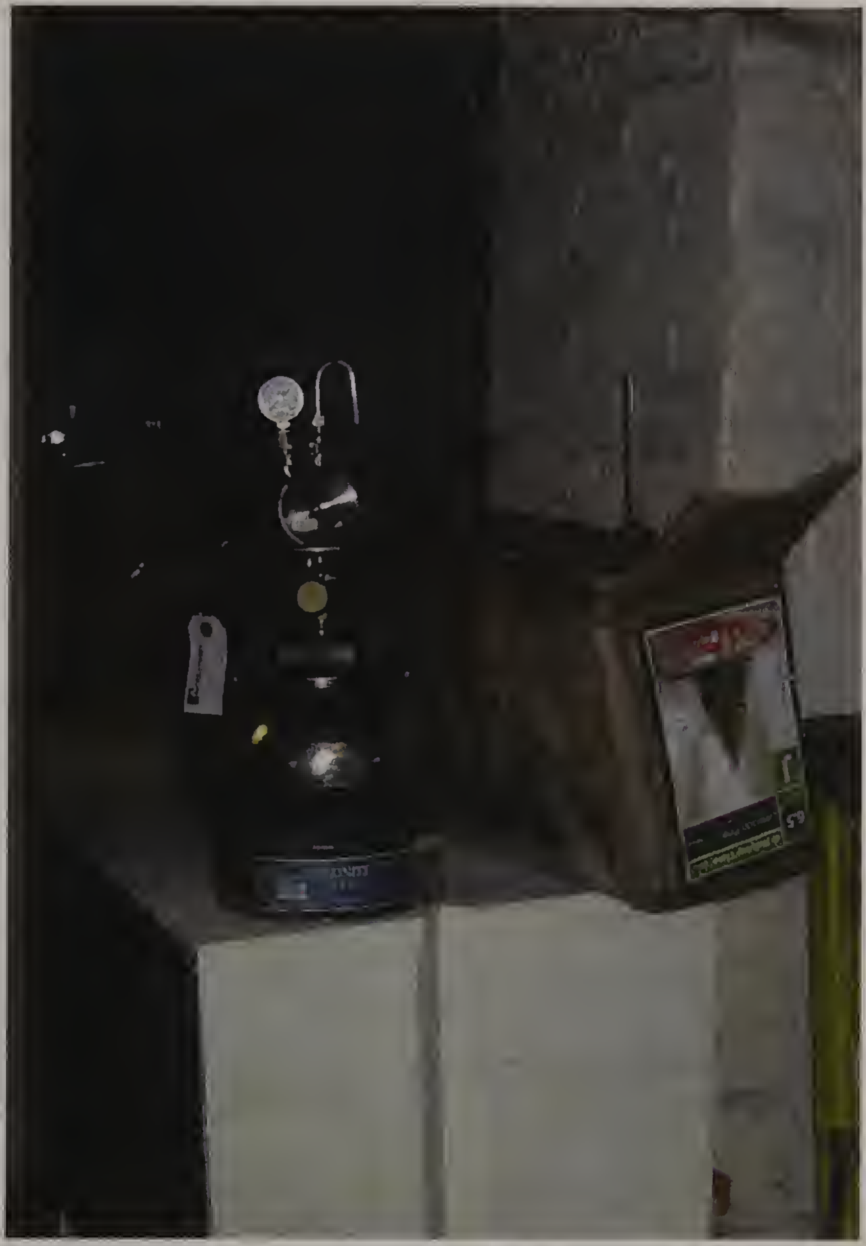
The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 2/24/11.

Air intake at **4' 10"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

Air Sampling: 18 Morton Street (February 23 to 24, 2011)



045163-18Mort-B

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
17 Knowlton Street

Sample ID: **045163-17Know-1**

Date:	**26-Feb-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M014**	Sampling Start Time:	**9:45 AM**
Flow Regulator ID:	**MC001**	Sampling Finish Time:	**9:39 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30**	**2**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**30.9**	**32.0**
Barometric Pressure (in. Hg):	**30.12**	**29.98**
Prevailing Wind Direction:	**NW**	**N**
General Weather Conditions:	**Mostly cloudy**	**Snow**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**71.6**	**70.2**
Barometric Pressure (in. Hg):	**30.09**	**29.96**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection? **No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event‘ **Yes**

Were any of the residents at home during sampling? **Yes**
If yes, provide detail:

Tenant present during sampling.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 2/27/11.

Air intake at **3' 6"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
17 Knowlton Street

Sample ID: **045163-17Know-B**

Date:	**26-Feb-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M011**	Sampling Start Time:	**9:51 AM**
Flow Regulator ID:	**MC049**	Sampling Finish Time:	**9:41 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30***	**3**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**30.9**	**32.0**
Barometric Pressure (in. Hg):	**30.12**	**29.98**
Prevailing Wind Direction:	**NW**	**N**
General Weather Conditions:	**Mostly cloudy**	**Snow**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**61.7**	**63.1**
Barometric Pressure (in. Hg):	**30.08**	**29.95**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **Yes**

Were any of the residents at home during sampling?**Yes**
If yes, provide detail:

Tenant and Homeowners were on first and second floors.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 2/27/11. Basement ceiling height at front: 6' 7"; celing height at rear: 6' 8". Basement used for storage and laundry.

Air intake at **4' 4"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

Air Sampling: 17 Knowlton Street (February 26 to 27, 2011)

045163-17Know-1

045163-17Know-B

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
10 Morton Street

Sample ID: **045163-10Mort-1**

Date:	**04-Mar-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M141**	Sampling Start Time:	**9:02 AM**
Flow Regulator ID:	**MC018**	Sampling Finish Time:	**9:09 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30**	**2**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**25.0**	**43**
Barometric Pressure (in. Hg):	**30.79**	**31.47**
Prevailing Wind Direction:	**Calm**	**Calm**
General Weather Conditions:	**Partly cloudy**	**Overcast**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**72.8**	**71**
Barometric Pressure (in. Hg):	**30.75**	**30.47**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection? **No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **No**

Were any of the residents at home during sampling? **Yes**
If yes, provide detail:

Homeowners present.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat: interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 3/5/11.

Air intake at **3'** above the floor.

* Estimated reading beyond gauge pressure markings. NM=Not Measured

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
10 Morton Street

Sample ID: **045163-10Mort-B**

Date:	**04-Mar-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M129**	Sampling Start Time:	**9:10 AM**
Flow Regulator ID:	**MC133**	Sampling Finish Time:	**9:06 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30**	**0**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**25.0**	**43**
Barometric Pressure (in. Hg):	**30.79**	**30.47**
Prevailing Wind Direction:	**Calm**	**Calm**
General Weather Conditions:	**Partly cloudy**	**Overcast**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**59.0**	**61**
Barometric Pressure (in. Hg):	**30.75**	**30.47**

Did Summa Canister go to ambient pressure? **Yes**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection? **No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **No**

Were any of the residents at home during sampling? **Yes**
If yes, provide detail:

Homeowners present.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 3/5/11. Basement ceiling height to joists in front of basement: 6' 4". Basement ceiling height to joists in rear: 6' 4". Center joist height: 5'9".

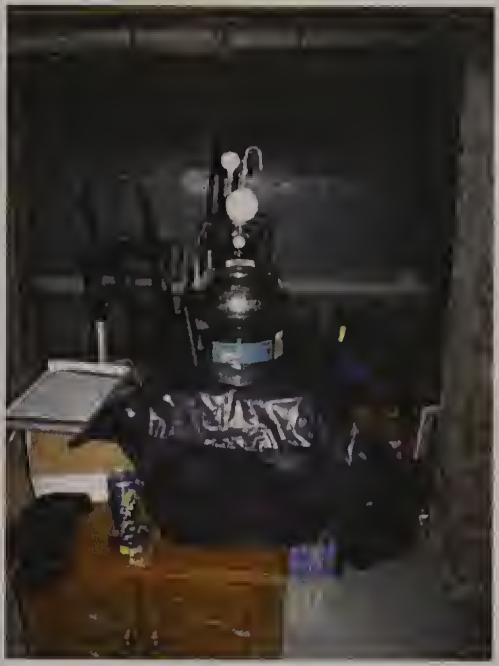
Air intake at **4' 5"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

Air Sampling: 10 Morton Street (March 4 to 5, 2011)

045163-10Mort-1



045163-10Mort-B

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
32 Knowlton Street

Sample ID: **045163-32KNOW-1**

Date:	**07-Mar-11**	Sample Type:	**Indoor**
Sampling Personel:	**N. Slagowski**	Analysis Method:	**TO-15**
Summa Canister ID:	**M097**	Sampling Start Time:	**7:50 AM**
Flow Regulator ID:	**MC107**	Sampling Finish Time:	**7:45 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30***	**4**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**54**	**28**
Barometric Pressure (in. Hg):	**29.42**	**30.48**
Prevailing Wind Direction:	**SW**	**NW**
General Weather Conditions:	**Light rain**	**Partly cloudy**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**68**	**67.8**
Barometric Pressure (in. Hg):	**29.40**	**30.50**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **N. Slagowski**

Was the building aired out prior to sample collection? **No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **Yes**

Were any of the residents at home during sampling? **Yes**
If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the finish time stated above or 3/8/11.

Air intake at **3' 11"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
32 Knowlton Street

Sample ID: **045163-32Know-B**

Date:	**07-Mar-11**	Sample Type:	**Indoor**
Sampling Personel:	**N. Slagowski**	Analysis Method:	**TO-15**
Summa Canister ID:	**M169**	Sampling Start Time:	**7:44 AM**
Flow Regulator ID:	**MC068**	Sampling Finish Time:	**7:44 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30***	**3**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**54**	**28**
Barometric Pressure (in. Hg):	**29.42**	**30.48**
Prevailing Wind Direction:	**SW**	**NW**
General Weather Conditions:	**Light rain**	**Partly cloudy**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**62.2**	**61.8**
Barometric Pressure (in. Hg):	**29.41**	**30.53**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **N. Slagowski**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **Yes**

Were any of the residents at home during sampling?**Yes**
If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the finish time stated above or 3/8/11. Basement ceiling height to joists in front of basement: 78.5"; in rear of basement: 77".

Air intake at **4' 1"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

Air Sampling: 32 Knowlton Street (March 7 to 8, 2011)

045163-32KNOW-1

045163-32KNOW-B

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:

60 Tufts Street

Sample ID: **045163-60TUFTU5-1**

Date:	**07-Mar-11**	Sample Type:	**Indoor**
Sampling Personel:	**N. Slagowski**	Analysis Method:	**TO-15**
Summa Canister ID:	**M161**	Sampling Start Time:	**8:03 AM**
Flow Regulator ID:	**MC017**	Sampling Finish Time:	**8:02 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30***	**3**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**54**	**27**
Barometric Pressure (in. Hg):	**29.42**	**30.43**
Prevailing Wind Direction:	**SW**	**Calm**
General Weather Conditions:	**Light rain**	**Sunny**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**74.6**	**73.9**
Barometric Pressure (in. Hg):	**29.38**	**30.37**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **N. Slagowski**

Was the building aired out prior to sample collection? **No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **Yes**

Were any of the residents at home during sampling? **Yes**
If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the data interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 3/8/11.

Air intake at **3' 1"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

Air Sampling: 60 Tufts Street, Unit 5 (March 7 to 8, 2011)

045163-60TUFTU5-1

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
117 Washington Street

Sample ID: **045163-117WASH-1**

Date:	**08-Mar-11**	Sample Type:	**Indoor**
Sampling Personel:	**N. Slagowski**	Analysis Method:	**TO-15**
Summa Canister ID:	**M119**	Sampling Start Time:	**11:08 AM**
Flow Regulator ID:	**MC091**	Sampling Finish Time:	**11:12 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30***	**4**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**35**	**36**
Barometric Pressure (in. Hg):	**30.54**	**31.23**
Prevailing Wind Direction:	**Calm**	**E**
General Weather Conditions:	**Sunny**	**Overcast, Windy**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**35**	**36**
Barometric Pressure (in. Hg):	**30.47**	**31.23**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **N. Slagowski**

Was the building aired out prior to sample collection? **No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **No**

Were any of the residents at home during sampling? **No**
If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 3/9/11. Basement ceiling height is ~74.5". The basement floor is submerged under ~20" of water.

Air intake at **2' 10"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

Air Sampling: 117 Washington Street (March 8 to 9, 2011)

045163-117WASH-1

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:

95 Franklin Street

Sample ID: **045163-95Fran-1**

Date:	**10-Mar-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M108**	Sampling Start Time:	**8:25 AM**
Flow Regulator ID:	**MC108**	Sampling Finish Time:	**8:14 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30**	**4**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**39**	**44.1**
Barometric Pressure (in. Hg):	**30.48**	**29.86**
Prevailing Wind Direction:	**SE**	**SE**
General Weather Conditions:	**Overcast**	**Fog**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**71**	**70**
Barometric Pressure (in. Hg):	**30.46**	**29.78**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection? **No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **Yes**

Were any of the residents at home during sampling? **Yes**
If yes, provide detail:

Homeowners present.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 3/11/11.

Air intake at **3'** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
95 Franklin Street

Sample ID: **045163-95Fran-B**

Date:	**10-Mar-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M211**	Sampling Start Time:	**8:29 AM**
Flow Regulator ID:	**MC127**	Sampling Finish Time:	**8:17 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**27**	**0**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**39**	**44.1**
Barometric Pressure (in. Hg):	**30.48**	**29.86**
Prevailing Wind Direction:	**SE**	**SE**
General Weather Conditions:	**Overcast**	**Fog**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**58.1**	**62.7**
Barometric Pressure (in. Hg):	**30.41**	**29.79**

Did Summa Canister go to ambient pressure? **Yes**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **Yes**

Were any of the residents at home during sampling?**Yes**
If yes, provide detail:

Homeowners present.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 3/11/11. Basement ceiling height to joist in front: 5' 5". Basement ceiling height to joist in rear: 5' 4' Basement does not appear to be used for anything--no storage or laundry.

Air intake at **4' 2"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

Air Sampling: 95 Franklin Street (March 10 to 11, 2011)

045163-95Fran-1

045163-95Fran-B

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:

35-37 Knowlton Street

Sample ID: **045163-35Know-1**

Date:	**10-Mar-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M094**	Sampling Start Time:	**9:43 AM**
Flow Regulator ID:	**MC022**	Sampling Finish Time:	**9:40 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30**	**5**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**39**	**44.6**
Barometric Pressure (in. Hg):	**30.47**	**29.84**
Prevailing Wind Direction:	**SE**	**E**
General Weather Conditions:	**Overcast**	**Rain**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**69.2**	**72**
Barometric Pressure (in. Hg):	**30.38**	**29.75**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **Yes**

Were any of the residents at home during sampling?**Yes**

If yes, provide detail:

Homeowners present.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 3/11/11.

Air intake at **4' 7"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
35-37 Knowlton Street

Sample ID: **045163-35Know-B**

Date:	**10-Mar-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M238**	Sampling Start Time:	**9:58 AM**
Flow Regulator ID:	**MC055**	Sampling Finish Time:	**9:43 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30**	**3**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**39**	**44.6**
Barometric Pressure (in. Hg):	**30.47**	**29.84**
Prevailing Wind Direction:	**SE**	**E**
General Weather Conditions:	**Overcast**	**Rain**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**66.5**	**65**
Barometric Pressure (in. Hg):	**30.39**	**29.76**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **Yes**

Were any of the residents at home during sampling?**Yes**
If yes, provide detail:

Homeowners and repairmen present.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 3/11/11. Basement ceiling height to joists in front of basement: 6' 8.5". Basement ceiling height to joists in rear: 6' 7". On 3/10, hot water was seen to be discharging from the hot water heater in the center of the basement. GEI alerted the homeowner. GEI also observed condensate on one of the

Air intake at **3'** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

Air Sampling: 35-37 Knowlton Street (March 10 to 11, 2011)

045163-35Know-1

045163-35Know-B

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
150 Glen Street

Sample ID: **045163-150Glen-Rm126**

Date:	**16-Mar-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M098**	Sampling Start Time:	**2:35 PM**
Flow Regulator ID:	**MC003**	Sampling Finish Time:	**2:47 PM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30**	**2.5**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**44.1**	**61.0**
Barometric Pressure (in. Hg):	**29.98**	**30.06**
Prevailing Wind Direction:	**NW**	**Variable**
General Weather Conditions:	**Rain**	**Partly sunny**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**73.2**	**75.0**
Barometric Pressure (in. Hg):	**29.91**	**30.01**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **Yes**

Were any of the residents at home during sampling?**Yes**
If yes, provide detail:

Some teachers and custodians.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 3/17/11.

Air intake at **3' 4"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
150 Glen Street

Sample ID: **045163-150Glen-Rm138**

Date:	**16-Mar-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M240**	Sampling Start Time:	**2:43 PM**
Flow Regulator ID:	**MC005**	Sampling Finish Time:	**2:54 PM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30***	**2**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**44.1**	**61.0**
Barometric Pressure (in. Hg):	**29.98**	**30.06**
Prevailing Wind Direction:	**NW**	**Variable**
General Weather Conditions:	**Rain**	**Partly sunny**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**75.0**	**78.0**
Barometric Pressure (in. Hg):	**29.90**	**29.97**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **Yes**

Were any of the residents at home during sampling?**Yes**
If yes, provide detail:

Some teachers and custodians.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 3/17/11.

Air intake at **3' 6"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
150 Glen Street

Sample ID: **045163-150Glen-Rm139**

Date:	**16-Mar-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M121**	Sampling Start Time:	**2:43 PM**
Flow Regulator ID:	**MC016**	Sampling Finish Time:	**2:54 PM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30**	**2**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**44.1**	**61.0**
Barometric Pressure (in. Hg):	**29.98**	**30.06**
Prevailing Wind Direction:	**NW**	**Variable**
General Weather Conditions:	**Rain**	**Partly sunny**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**75.0**	**78.0**
Barometric Pressure (in. Hg):	**29.90**	**29.97**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **Yes**

Were any of the residents at home during sampling?**Yes**
If yes, provide detail:

Some teachers and custodians.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 3/17/11.

Air intake at **3' 6"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
150 Glen Street

Sample ID: **045163-150Glen-Rm141**

Date:	**16-Mar-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M221**	Sampling Start Time:	**2:48 PM**
Flow Regulator ID:	**MC140**	Sampling Finish Time:	**2:59 PM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**29**	**2**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**44.1**	**61.0**
Barometric Pressure (in. Hg):	**29.98**	**30.06**
Prevailing Wind Direction:	**NW**	**Variable**
General Weather Conditions:	**Rain**	**Partly sunny**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**70.3**	**74.1**
Barometric Pressure (in. Hg):	**29.90**	**29.97**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **Yes**

Were any of the residents at home during sampling?**Yes**
If yes, provide detail:

Some teachers and custodians.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 3/17/11.

Air intake at **4'** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
150 Glen Street

Sample ID: **045163-150Glen-Rm142**

Date:	**16-Mar-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M153**	Sampling Start Time:	**2:52 PM**
Flow Regulator ID:	**MC137**	Sampling Finish Time:	**3:02 PM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**29.5**	**0**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**44.1**	**61.0**
Barometric Pressure (in. Hg):	**29.98**	**30.06**
Prevailing Wind Direction:	**NW**	**Variable**
General Weather Conditions:	**Rain**	**Partly sunny**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**73.5**	**77.7**
Barometric Pressure (in. Hg):	**29.90**	**29.97**

Did Summa Canister go to ambient pressure? **Yes**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection?**No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **Yes**

Were any of the residents at home during sampling?**Yes**
If yes, provide detail:
Some teachers and custodians.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat: interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 3/17/11.

Air intake at **4'** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
150 Glen Street

Sample ID: **045163-150Glen-Rm146**

Date:	**16-Mar-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M022**	Sampling Start Time:	**2:57 PM**
Flow Regulator ID:	**MC146**	Sampling Finish Time:	**3:06 PM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30**	**0**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**44.1**	**61.0**
Barometric Pressure (in. Hg):	**29.98**	**30.06**
Prevailing Wind Direction:	**NW**	**Variable**
General Weather Conditions:	**Rain**	**Partly sunny**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**73.4**	**77.0**
Barometric Pressure (in. Hg):	**29.91**	**29.97**

Did Summa Canister go to ambient pressure? **Yes**

PID readings at sample location (ppb): **0**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection? **No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event' **Yes**

Were any of the residents at home during sampling? **Yes**
If yes, provide detail:

Some teachers and custodians.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

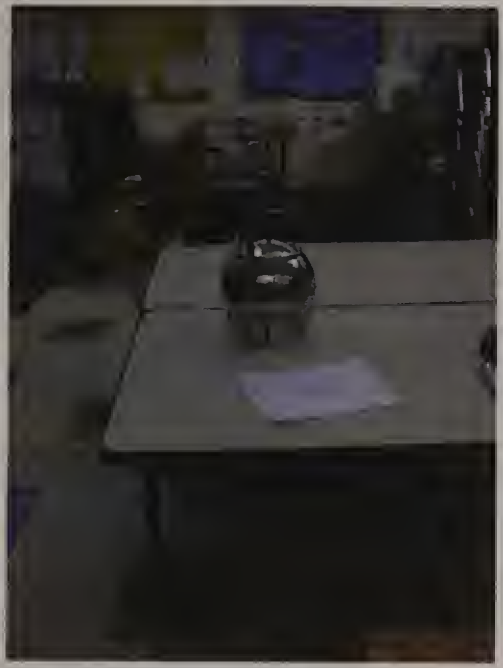
The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 3/17/11.

Air intake at **3' 4"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

Air Sampling: Capuano Center (March 16 to 17, 2011)



045163-150Glen-Rm126

045163-150Glen-Rm138 &
045163-150Glen-Rm139 (duplicate)

045163-150Glen-Rm141

045163-150Glen-Rm142

045163-150Glen-Rm146

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
19-19A Morton Street

Sample ID: **045163-19MORT-1**

Date:	**09-Apr-11**	Sample Type:	**Indoor**
Sampling Personel:	**N. Slagowski**	Analysis Method:	**TO-15**
Summa Canister ID:	**M171**	Sampling Start Time:	**9:35 AM**
Flow Regulator ID:	**MC093**	Sampling Finish Time:	**9:35 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**29.5**	**2**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**50.5**	**55.4**
Barometric Pressure (in. Hg):	**30.12**	**30.14**
Prevailing Wind Direction:	**Calm**	**SE**
General Weather Conditions:	**Sunny**	**Sunny, breezy**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**61.5**	**63.6**
Barometric Pressure (in. Hg):	**30.12**	**30.10**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0.000**

Photographs taken before sampling by: **N. Slagowski**

Was the building aired out prior to sample collection? **Yes**

Windows open? **Yes** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event‘ **No**

Were any of the residents at home during sampling? **Yes**
If yes, provide detail:
First and second floor.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 4/10/11. Windows had been open about 30 minutes when I arrived, and they were shut for remainder of sampling. On 4/10/11, resident was varnishing a cabinet on first floor near basement door, two rooms away from sampling location.

Air intake at **4' 4"** above the floor.

* Estimated reading beyond gauge pressure markings. NM=Not Measured

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
19-19A Morton Street

Sample ID: **045163-19MORT-B**

Date:	**09-Apr-11**	Sample Type:	**Indoor**
Sampling Personel:	**N. Slagowski**	Analysis Method:	**TO-15**
Summa Canister ID:	**M213**	Sampling Start Time:	**9:32 AM**
Flow Regulator ID:	**MC058**	Sampling Finish Time:	**9:33 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**29.5**	**5**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**50.5**	**55.4**
Barometric Pressure (in. Hg):	**30.12**	**30.14**
Prevailing Wind Direction:	**Calm**	**SE**
General Weather Conditions:	**Sunny**	**Sunny, breezy**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**59.9**	**61.3**
Barometric Pressure (in. Hg):	**30.16**	**30.12**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **0.000**

Photographs taken before sampling by: **N. Slagowski**

Was the building aired out prior to sample collection? **Yes**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event‘ **No**

Were any of the residents at home during sampling? **Yes**
If yes, provide detail:
First and second floor

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the dat interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 4/10/11. Windows had been open about 30 minutes when I arrived, and they were shut for remainder of sampling. On 4/10/11, resident was varnishing a cabinet on first floor near basement door.

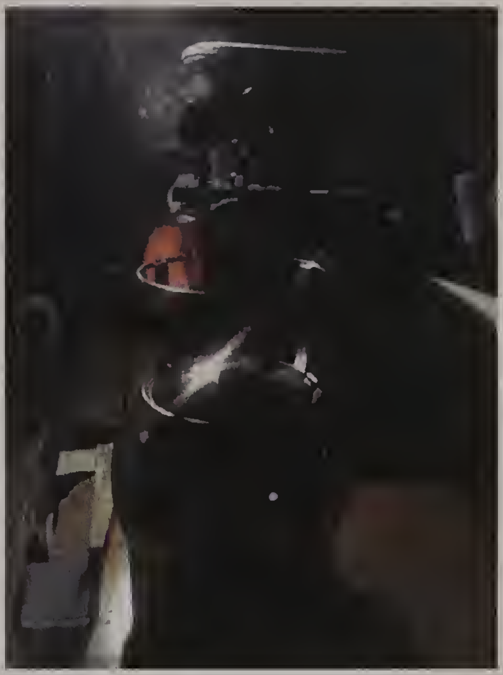
Air intake at **4' 8"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

Air Sampling: 19-19A Morton Street (April 9 to 10, 2011)

045163-19MORT-1


045163-19MORT-B

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
27 Tufts Street

Sample ID: **045163-27TUFT-1**

Date:	**15-Jun-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M214**	Sampling Start Time:	**10:10 AM**
Flow Regulator ID:	**MC092**	Sampling Finish Time:	**9:33 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**25**	**0**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**70.1**	**76.6**
Barometric Pressure (in. Hg):	**29.71**	**29.76**
Prevailing Wind Direction:	**SE**	**W**
General Weather Conditions:	**Sunny**	**Sunny**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**68.1**	**72.3**
Barometric Pressure (in. Hg):	**29.71**	**29.76**

Did Summa Canister go to ambient pressure? **Yes**

PID readings at sample location (ppb): **NM**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection? **No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **Yes**

Were any of the residents at home during sampling? **No**
If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the data interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 6/16/11. Slight odor of natural gas in the unoccupied first floor apartment.

Air intake at **3' 11"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:

27 Tufts Street

Sample ID: **045163-27TUFT-B**

Date:	**15-Jun-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M233**	Sampling Start Time:	**10:15 AM**
Flow Regulator ID:	**MC016**	Sampling Finish Time:	**9:38 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30***	**3**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**70.1**	**76.6**
Barometric Pressure (in. Hg):	**29.71**	**29.76**
Prevailing Wind Direction:	**SE**	**W**
General Weather Conditions:	**Sunny**	**Sunny**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**67.4**	**70.1**
Barometric Pressure (in. Hg):	**29.72**	**29.77**

Did Summa Canister go to ambient pressure? **No**

PID readings at sample location (ppb): **NM**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection? **No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **Yes**

Were any of the residents at home during sampling? **No**
If yes, provide detail:

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the data interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 6/16/11. Fire alarm battery dying; there is workout equipment and a stereo turned on in the basement.

Air intake at **4' 8"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

Air Sampling: 27 Tufts Street (June 15 to 16, 2011)

045163-27Tuft-1

045163-27Tuft-B

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
95 Franklin Street

Sample ID: **045163-95FRAN-1**

Date:	**23-Jun-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M227**	Sampling Start Time:	**9:32 AM**
Flow Regulator ID:	**MC093**	Sampling Finish Time:	**9:07 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30**	**0**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**63**	**64**
Barometric Pressure (in. Hg):	**29.86**	**29.86**
Prevailing Wind Direction:	**NE**	**NE**
General Weather Conditions:	**Overcast**	**Overcast**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**NM**	**NM**
Barometric Pressure (in. Hg):	**NM**	**NM**

Did Summa Canister go to ambient pressure? **Yes**

PID readings at sample location (ppb): **NM**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection? **No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **Yes**

Were any of the residents at home during sampling? **Yes**
If yes, provide detail:

Residents on first and second floors.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the data interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 6/24/11.

Air intake at **3' 0"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

GEI Consultants

Indoor Air Sampling Checklist

Sampling Location:
95 Franklin Street

Sample ID: **045163-95FRAN-B**

Date:	**23-Jun-11**	Sample Type:	**Indoor**
Sampling Personel:	**S. Slater**	Analysis Method:	**TO-15**
Summa Canister ID:	**M029**	Sampling Start Time:	**9:36 AM**
Flow Regulator ID:	**MC005**	Sampling Finish Time:	**9:09 AM**

Pressure gauge reading:	Pre-opening	Post-collection
Summa Canister Vacuum (in. Hg):	**30***	**0**
Environmental Conditions (Outside):	Before Sampling	After Sampling
Temperature (°F):	**63**	**64**
Barometric Pressure (in. Hg):	**29.86**	**29.86**
Prevailing Wind Direction:	**NE**	**NE**
General Weather Conditions:	**Overcast**	**Overcast**
Environmental Conditions (Inside):	Before Sampling	After Sampling
Temperature (°F):	**NM**	**NM**
Barometric Pressure (in. Hg):	**NM**	**NM**

Did Summa Canister go to ambient pressure? **Yes**

PID readings at sample location (ppb): **NM**

Photographs taken before sampling by: **S. Slater**

Was the building aired out prior to sample collection? **No**

Windows open? **No** Ventilation fans? **No**

Was there significant precipitation within 12 hours of (or during) the sampling event? **Yes**

Were any of the residents at home during sampling? **Yes**
If yes, provide detail:
Residents on first and second floors.

Did any of the occupants NOT follow instruction for residents? **No** If yes, describe:

Provide any additional information that may be pertinent to the sampling event and may assist in the data interpretation process.

The sample was conducted over a 24 hour period. It was taken down at the ending time stated above on 6/24/11.

Air intake at **4' 10"** above the floor.

* Estimated reading beyond gauge pressure markings.

NM=Not Measured

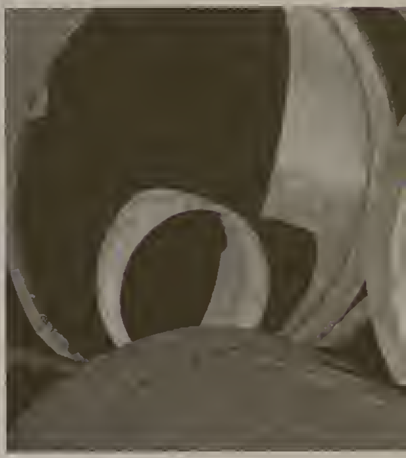
Air Sampling: 95 Franklin Street (June 23 to 24, 2011)

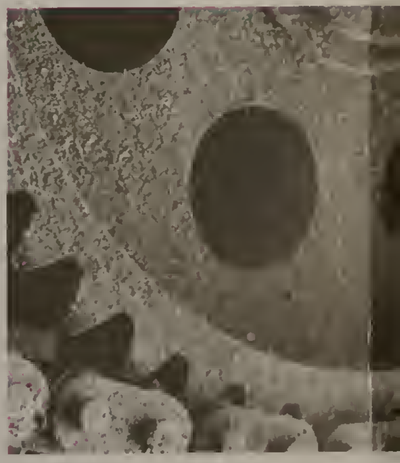
045163-95Fran-1

045163-95Fran-B

GEI Consultants

Geotechnical
Environmental
Water Resources
Ecological





Appendix E

Field Monitoring Forms and Inspection Logs

Capuano Center Sub-Slab Depressurization System
Monthly Mechanical Inspection Log

GENERAL INFORMATION

GEI Field Representatives: S. Slater

Start-time of monitoring work: 14:00

Date: 12/30/10

End-time of monitoring work: 15:00

Weather: Partly sunny, ~35°

System Status: On

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	GEI Identification No.	Calibrant	Successful Calibration
PID (ppb)	ION Sciences	Phocheck + 5000	N/A	100 ppm Isobutylene	Yes
Manometer (in. H_20)	Dwyer	Mark III-475-0000-FM	N/A	N/A	Zeroed before each reading
Hot Wire Thermo-Anemometer (ft/min)	Extech Instruments	407123	N/A	N/A	Zeroed before each reading

OBSERVATIONS AND MEASUREMENTS

ENCLOSURE MEASUREMENTS

Shed Secure? Yes

Condensate Accumulated? Yes

Condensate Drained? Yes

Combined Influent Flow Rate

Average Flow Rate (cfm)	132

System Monitoring Points

Port ID	Typical Vacuum Range (in. H_2O)	Vacuum (in. H_2O)	Typical Range of VOCs (ppb)	VOC Concentration (ppb)
Manifold 12	-0.300 to -0.500	-0.497	0 to 2000	0
Manifold 13	-0.300 to -0.500	-0.472	0 to 5000	0
Manifold 14	-0.300 to -0.500	-0.455	0 to 2000	0
Combined Influent	-0.600 to -0.700	-0.728	0 to 2000	0
Effluent	0.480 to 0.600	0.627	0 to 2000	0

EXTERIOR EXTRACTION MONITORING POINT MEASUREMENTS

Monitoring Point Identification	Status (on/off)	Vacuum (in. H_2O)	VOC Concentration (ppb)
122-1	on	NM	NM
122-2	on	NM	NM
122-3	on	NM	NM
126-1	on	NM	NM
126-2	on	NM	NM
126-3	on	NM	NM
134-1	on	NM	NM
134-2	on	NM	NM
134-3	on	NM	NM
138-1	on	NM	NM
138-2	on	NM	NM
138-3	on	NM	NM
142-1	on	NM	NM
142-2	on	NM	NM
142-3	on	NM	NM
146-1	on	NM	NM
146-2	on	NM	NM
146-3	on	NM	NM

Capuano Center Sub-Slab Depressurization System
Monthly Mechanical Inspection Log

INTERIOR MEASUREMENTS

Ambient Air Measurements

Classroom	VOC Concentration (ppb)
122	NM
126	NM
134	NM
138	NM
133	NM
137	NM
142	NM
146	NM

Sub-Slab Monitoring Points

Monitoring Point Identification	Vacuum (in. H_2O)	VOC Concentration (ppb)
Room 122A	NM	NM
Room 126A	NM	NM
Room 133A	NM	NM
Room 137A	NM	NM
Room 142A	NM	NM
Room 146A	NM	NM

COMMENTS

Due to snow cover, the outdoor extraction points could not be reached.

Removed ~ 1 gallon of water from manifold 14. No water had accumulated in the knockout drum.

Indoor measurments were not taken because the school was closed for the holidays.

Notes:

1. Manifold 12 is the manifold pipe for rooms 122 and 126.
   Manifold 13 is the manifold pipe for rooms 134 and 138.
   Manifold 14 is the manifold pipe for rooms 142 and 146.
2. PID = photoionization detector.
3. ppb = parts per billion.
4. ppm = parts per million.
5. in. H_2O = inches of water column.
6. ft = feet.
7. ft/min = feet per minute.
8. cfm = cubic feet per minute.
9. N/A = Not Applicable.
10. NM = Not Measured.

Capuano Center Sub-Slab Depressurization System
Monthly Mechanical Inspection Log

GENERAL INFORMATION

GEI Field Representatives:	S. Slater		
		Start-time of monitoring work:	14:50
Date:	01/24/11	End-time of monitoring work:	15:50
Weather:	Sunny, ~10°	System Status:	On

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	GEI Identification No.	Calibrant	Successful Calibration
PID (ppb)	ION Sciences	Phocheck + 5000	N/A	100 ppm Isobutylene	Yes
Manometer (in. H_20)	Dwyer	Mark III-475-0000-FM	N/A	N/A	Zeroed before each reading
Hot Wire Thermo-Anemometer (ft/min)	Extech Instruments	407123	N/A	N/A	Zeroed before each reading

OBSERVATIONS AND MEASUREMENTS

ENCLOSURE MEASUREMENTS

Shed Secure? Yes

Condensate Accumulated? Yes

Condensate Drained? No

Combined Influent Flow Rate

Average Flow Rate (cfm)	130

System Monitoring Points

Port ID	Typical Vacuum Range (in. H_2O)	Vacuum (in. H_2O)	Typical Range of VOCs (ppb)	VOC Concentration (ppb)
Manifold 12	-0.300 to -0.500	-1.097	0 to 2000	0
Manifold 13	-0.300 to -0.500	-0.932	0 to 5000	0
Manifold 14	-0.300 to -0.500	-0.993	0 to 2000	0
Combined Influent	-0.600 to -0.700	-1.306	0 to 2000	0
Effluent	0.480 to 0.600	1.032	0 to 2000	0

EXTERIOR EXTRACTION MONITORING POINT MEASUREMENTS

Monitoring Point Identification	Status (on/off)	Vacuum (in. H_2O)	VOC Concentration (ppb)
122-1	on	NM	NM
122-2	on	NM	NM
122-3	on	NM	NM
126-1	on	NM	NM
126-2	on	NM	NM
126-3	on	NM	NM
134-1	on	NM	NM
134-2	on	NM	NM
134-3	on	NM	NM
138-1	on	NM	NM
138-2	on	NM	NM
138-3	on	NM	NM
142-1	on	NM	NM
142-2	on	NM	NM
142-3	on	NM	NM
146-1	on	NM	NM
146-2	on	NM	NM
146-3	on	NM	NM

Capuano Center Sub-Slab Depressurization System
Monthly Mechanical Inspection Log

INTERIOR MEASUREMENTS

Ambient Air Measurements

Classroom	VOC Concentration (ppb)
122	0
126	0
134	0
138	0
133	0
137	0
142	0
146	0

Sub-Slab Monitoring Points

Monitoring Point Identification	Vacuum (in. H_2O)	VOC Concentration (ppb)
Room 122A	0 to -0.010	0
Room 126A	0.000	0
Room 133A	0.000	0
Room 137A	0.000	0
Room 142A	0 to -0.003	0
Room 146A	0.004	0

COMMENTS

Due to snow cover, the outdoor extraction points could not be reached.

Notes:

1. Manifold 12 is the manifold pipe for rooms 122 and 126.
   Manifold 13 is the manifold pipe for rooms 134 and 138.
   Manifold 14 is the manifold pipe for rooms 142 and 146.
2. PID = photoionization detector.
3. ppb = parts per billion.
4. ppm = parts per million.
5. in. H_2O = inches of water column.
6. ft = feet.
7. ft/min = feet per minute.
8. cfm = cubic feet per minute.
9. N/A = Not Applicable.
10. NM = Not Measured.

Capuano Center Sub-Slab Depressurization System
Monthly Mechanical Inspection Log

GENERAL INFORMATION

GEI Field Representatives:	S. Slater		
		Start-time of monitoring work:	12:00
Date:	02/11/11	End-time of monitoring work:	14:00
Weather:	Sunny, ~20°	System Status:	On

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	GEI Identification No.	Calibrant	Successful Calibration
PID (ppb)	ION Sciences	Phocheck + 5000	N/A	100 ppm Isobutylene	Yes
Manometer (in. H_20)	Dwyer	Mark III-475-0000-FM	N/A	N/A	Zeroed before each reading
Hot Wire Thermo-Anemometer (ft/min)	Extech Instruments	407123	N/A	N/A	Zeroed before each reading

OBSERVATIONS AND MEASUREMENTS
ENCLOSURE MEASUREMENTS

Shed Secure? Yes

Condensate Accumulated? Yes

Condensate Drained? Yes

Combined Influent Flow Rate

Average Flow Rate (cfm)	NM

System Monitoring Points

Port ID	Typical Vacuum Range (in. H_2O)	Vacuum (In. H_2O)	Typical Range of VOCs (ppb)	VOC Concentration (ppb)
Manifold 12	-0.300 to -0.500	-0.600 to -1.000	0 to 2000	0
Manifold 13	-0.300 to -0.500	-0.650 to -1.200	0 to 5000	0
Manifold 14	-0.300 to -0.500	-0.620 to -1.200	0 to 2000	0
Combined Influent	-0.600 to -0.700	-0.950 to -1.400	0 to 2000	0
Effluent	0.480 to 0.600	0.656	0 to 2000	0

EXTERIOR EXTRACTION MONITORING POINT MEASUREMENTS

Monitoring Point Identification	Status (on/off)	Vacuum (in. H_2O)	VOC Concentration (ppb)
122-1	on	NM	NM
122-2	on	NM	NM
122-3	on	NM	NM
126-1	on	NM	NM
126-2	on	NM	NM
126-3	on	NM	NM
134-1	on	NM	NM
134-2	on	NM	NM
134-3	on	NM	NM
138-1	on	NM	NM
138-2	on	NM	NM
138-3	on	NM	NM
142-1	on	NM	NM
142-2	on	NM	NM
142-3	on	NM	NM
146-1	on	NM	NM
146-2	on	NM	NM
146-3	on	NM	NM

Capuano Center Sub-Slab Depressurization System
Monthly Mechanical Inspection Log

INTERIOR MEASUREMENTS

Ambient Air Measurements

Classroom	VOC Concentration (ppb)
122	NM
126	NM
134	NM
138	NM
133	NM
137	NM
142	NM
146	NM

Sub-Slab Monitoring Points

Monitoring Point Identification	Vacuum (in. H_2O)	VOC Concentration (ppb)
Room 122A	NM	NM
Room 126A	NM	NM
Room 133A	NM	NM
Room 137A	NM	NM
Room 142A	NM	NM
Room 146A	NM	NM

COMMENTS

Due to snow cover, the outdoor extraction points could not be reached.

Removed ~5 gallons of water from manifolds 13 and 14. No water had accumulated in the knockout drum.

Notes:

1. Manifold 12 is the manifold pipe for rooms 122 and 126.
   Manifold 13 is the manifold pipe for rooms 134 and 138.
   Manifold 14 is the manifold pipe for rooms 142 and 146.
2. PID = photoionization detector.
3. ppb = parts per billion.
4. ppm = parts per million.
5. in. H_2O = inches of water column.
6. ft = feet.
7. ft/min = feet per minute.
8. cfm = cubic feet per minute.
9. N/A = Not Applicable.
10. NM = Not Measured.

CAPUANO CENTER SUB-SLAB DEPRESSURIZATION SYSTEM
PRE-SAMPLING CHECKLIST

Date: 3/16/2011 **Time Period:** 14:00-15:30 **Field Person:** S. Slater

Building Operating Parameter Verification

1. What is the building operating schedule?	Monday – Friday, 6 a.m. to 6 p.m.
2. Is the outdoor air for all air handling units and unit ventilators set to minimum damper position via EMS?	No, economize mode—if room gets too warm, dampers will open to modulate temp.
3. Are general exhaust fans F2 and F5 turned off?	F5 is on. (Double check at site)
4. Is RTU 1 RAF set at 50%?	No, it's at 40%.
5. Are RTU 1&2, AHU 1&2 operating?	Yes

Building Pressure Verification

Location Description	Time	In. H_2O
Franklin Street exit	15:15	0.003
Franklin Street Alley (Side Entrance)	15:16	-0.006
Franklin Street Alley (Service Entrance)	15:17	0.007
Soccer Field Entrance	15:19	-0.004
Glen Street Entrance	15:20	0.022

Sample Location Checklist

	Room 126	Room 138	Room 141	Room 142	Room 146
Unit ventilator operating	Yes	Yes	Yes	Yes	Yes
UV min OA damper position (EMS)	25%	25%	25%	25%	25%
Unit ventilator fan speed	High	Low	Door jammed—assumed High	High	Bolted Shut—assumed High
Windows closed	Yes	Yes	Yes	Yes	Yes
Bathroom door closed	Yes	Yes	Yes	Yes	Yes
Bathroom exhaust operating	Yes	Yes	Yes	Yes	Yes
Room door closed	Yes	Yes	Yes	Yes	Yes
Pressure wrt outdoors (in. H_2O)					
Pressure wrt corridor (in. H_2O)	-0.006	-0.004	-0.004	-0.006	-0.006

NOTES:

1. EMS = Energy Management System
2. AHU = air handling unit
3. UV = unit ventilator
4. RTU = roof top unit
5. RAF = return air fan
6. OA = outdoor air
7. wrt = with respect to
8. in.H_2O = inches of water column

Capuano Center Sub-Slab Depressurization System
Monthly Mechanical Inspection Log

GENERAL INFORMATION

GEI Field Representatives: S. Slater

Start-time of monitoring work: 15:00

Date: 03/17/11

End-time of monitoring work: 16:30

Weather: Sunny, ~40°

System Status: On

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	GEI Identification No.	Calibrant	Successful Calibration
PID (ppb)	ION Sciences	Phocheck + 5000	N/A	100 ppm Isobutylene	Yes
Manometer (in. H_20)	Dwyer	Mark III-475-0000-FM	N/A	N/A	Zeroed before each reading
Hot Wire Thermo-Anemometer (ft/min)	Extech Instruments	407123	N/A	N/A	Zeroed before each reading

OBSERVATIONS AND MEASUREMENTS

ENCLOSURE MEASUREMENTS

Shed Secure? Yes

Condensate Accumulated? Yes

Condensate Drained? Yes

Combined Influent Flow Rate

Average Flow Rate (cfm)	NM

System Monitoring Points

Port ID	Typical Vacuum Range (in. H_2O)	Vacuum (in. H_2O)	Typical Range of VOCs (ppb)	VOC Concentration (ppb)
Manifold 12	-0.300 to -0.500	-0.500	0 to 2000	0
Manifold 13	-0.300 to -0.500	-0.498	0 to 5000	0
Manifold 14	-0.300 to -0.500	-0.474	0 to 2000	0
Combined Influent	-0.600 to -0.700	-0.791	0 to 2000	0
Effluent	0.480 to 0.600	0.625	0 to 2000	0

EXTERIOR EXTRACTION MONITORING POINT MEASUREMENTS

Monitoring Point Identification	Status (on/off)	Vacuum (in. H_2O)	VOC Concentration (ppb)
122-1	on	-0.011	0
122-2	on	-0.017	0
122-3	on	-0.013	0
126-1	on	-0.425	0
126-2	on	-0.341	0
126-3	on	-0.409	0
134-1	on	-0.357	0
134-2	on	-0.243 to -0.398	0
134-3	on	-0.42	0
138-1	on	-0.469	0
138-2	on	-0.478	0
138-3	on	-0.444	0
142-1	on	-0.297	0
142-2	on	-0.292	0
142-3	on	-0.268	0
146-1	on	-0.253	0
146-2	on	-0.247	0
146-3	on	-0.256	0

Capuano Center Sub-Slab Depressurization System
Monthly Mechanical Inspection Log

INTERIOR MEASUREMENTS

Ambient Air Measurements

Classroom	VOC Concentration (ppb)
122	0
126	0
134	0
138	0
133	0
137	0
142	0
146	0

Sub-Slab Monitoring Points

Monitoring Point identification	Vacuum (in. H_2O)	VOC Concentration (ppb)
Room 122A	0.000	0
Room 126A	0.000	0
Room 133A	0.000	0
Room 137A	0.000	0
Room 142A	-0.007	0
Room 146A	-0.003	0

COMMENTS

Removed ~2 gallons of water from manifold 13 and ~2 gallons from manifold 14. No water had accumulated in the knockout drum.

Notes:

1. Manifold 12 is the manifold pipe for rooms 122 and 126.
   Manifold 13 is the manifold pipe for rooms 134 and 138.
   Manifold 14 is the manifold pipe for rooms 142 and 146.
2. PID = photoionization detector.
3. ppb = parts per billion.
4. ppm = parts per million.
5. in. H_2O = inches of water column.
6. ft = feet.
7. ft/min = feet per minute.
8. cfm = cubic feet per minute.
9. N/A = Not Applicable.
10. NM = Not Measured.

Capuano Center Sub-Slab Depressurization System
Monthly Mechanical Inspection Log

GENERAL INFORMATION

GEI Field Representatives: S. Slater

Date: 03/17/11

Weather: Sunny, ~40°

Start-time of monitoring work: 15:00

End-time of monitoring work: 16:30

System Status: On

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	GEI Identification No.	Calibrant	Successful Calibration
PID (ppb)	ION Sciences	Phocheck + 5000	N/A	100 ppm Isobutylene	Yes
Manometer (in. H_20)	Dwyer	Mark III-475-0000-FM	N/A	N/A	Zeroed before each reading
Hot Wire Thermo-Anemometer (ft/min)	Extech Instruments	407123	N/A	N/A	Zeroed before each reading

OBSERVATIONS AND MEASUREMENTS

ENCLOSURE MEASUREMENTS

Shed Secure? Yes

Condensate Accumulated? Yes

Condensate Drained? Yes

Combined Influent Flow Rate

Average Flow Rate (cfm)	NM

System Monitoring Points

Port ID	Typical Vacuum Range (in. H_2O)	Vacuum (in. H_2O)	Typical Range of VOCs (ppb)	VOC Concentration (ppb)
Manifold 12	-0.300 to -0.500	-0.500	0 to 2000	0
Manifold 13	-0.300 to -0.500	-0.498	0 to 5000	0
Manifold 14	-0.300 to -0.500	-0.474	0 to 2000	0
Combined Influent	-0.600 to -0.700	-0.791	0 to 2000	0
Effluent	0.480 to 0.600	0.625	0 to 2000	0

EXTERIOR EXTRACTION MONITORING POINT MEASUREMENTS

Monitoring Point Identification	Status (on/off)	Vacuum (in. H_2O)	VOC Concentration (ppb)
122-1	on	-0.011	0
122-2	on	-0.017	0
122-3	on	-0.013	0
126-1	on	-0.425	0
126-2	on	-0.341	0
126-3	on	-0.409	0
134-1	on	-0.357	0
134-2	on	-0.243 to -0.398	0
134-3	on	-0.42	0
138-1	on	-0.469	0
138-2	on	-0.478	0
138-3	on	-0.444	0
142-1	on	-0.297	0
142-2	on	-0.292	0
142-3	on	-0.268	0
146-1	on	-0.253	0
146-2	on	-0.247	0
146-3	on	-0.256	0

Capuano Center Sub-Slab Depressurization System
Monthly Mechanical Inspection Log

INTERIOR MEASUREMENTS

Ambient Air Measurements

Classroom	VOC Concentration (ppb)
122	0
126	0
134	0
138	0
133	0
137	0
142	0
146	0

Sub-Slab Monitoring Points

Monitoring Point Identification	Vacuum (in. H_2O)	VOC Concentration (ppb)
Room 122A	0.000	0
Room 126A	0.000	0
Room 133A	0.000	0
Room 137A	0.000	0
Room 142A	-0.007	0
Room 146A	-0.003	0

COMMENTS

Removed ~2 gallons of water from manifold 13 and ~2 gallons from manifold 14. No water had accumulated in the knockout drum.

Notes:

1. Manifold 12 is the manifold pipe for rooms 122 and 126.
   Manifold 13 is the manifold pipe for rooms 134 and 138.
   Manifold 14 Is the manifold pipe for rooms 142 and 146.
2. PID = photoionization detector.
3. ppb = parts per billion.
4. ppm = parts per million.
5. in. H_2O = inches of water column.
6. ft = feet.
7. ft/min = feet per minute.
8. cfm = cubic feet per minute.
9. N/A = Not Applicable.
10. NM = Not Measured.

Capuano Center Sub-Slab Depressurization System
Monthly Mechanical Inspection Log

GENERAL INFORMATION

GEI Field Representatives: S. Slater

Date: 04/25/11

Weather: Drizzle, ~50°

Start-time of monitoring work: 15:00

End-time of monitoring work: 16:00

System Status: On

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	GEI Identification No.	Calibrant	Successful Calibration
PID (ppb)	ION Sciences	Phocheck + 5000	N/A	100 ppm Isobutylene	Yes
Manometer (in. H_20)	Dwyer	Mark III-475-0000-FM	N/A	N/A	Zeroed before each reading
Hot Wire Thermo-Anemometer (ft/min)	Extech Instruments	407123	N/A	N/A	Zeroed before each reading

OBSERVATIONS AND MEASUREMENTS

ENCLOSURE MEASUREMENTS

Shed Secure? Yes

Condensate Accumulated? No

Condensate Drained? N/A

Combined Influent Flow Rate

Average Flow Rate (cfm)	125

System Monitoring Points

Port ID	Typical Vacuum Range (in. H_2O)	Vacuum (in. H_2O)	Typical Range of VOCs (ppb)	VOC Concentration (ppb)
Manifold 12	-0.300 to -0.500	-0.451	0 to 2000	0
Manifold 13	-0.300 to -0.500	-0.475	0 to 5000	0
Manifold 14	-0.300 to -0.500	-0.431	0 to 2000	0
Combined Influent	-0.600 to -0.700	-0.764	0 to 2000	0
Effluent	0.480 to 0.600	0.643	0 to 2000	0

EXTERIOR EXTRACTION MONITORING POINT MEASUREMENTS

Monitoring Point Identification	Status (on/off)	Vacuum (in. H_2O)	VOC Concentration (ppb)
122-1	on	-0.98	0
122-2	on	-0.125	0
122-3	on	-0.131	0
126-1	on	-0.342	0
126-2	on	-0.325	0
126-3	on	-0.351	0
134-1	on	-0.357	0
134-2	on	-0.391	0
134-3	on	-0.401	0
138-1	on	-0.415	0
138-2	on	-0.426	0
138-3	on	-0.407	0
142-1	on	-0.264	0
142-2	on	-0.251	0
142-3	on	-0.246	0
146-1	on	-0.225	0
146-2	on	-0.231	0
146-3	on	-0.217	0

Capuano Center Sub-Slab Depressurization System
Monthly Mechanical Inspection Log

INTERIOR MEASUREMENTS

Ambient Air Measurements

Classroom	VOC Concentration (ppb)
122	NM
126	NM
134	NM
138	NM
133	NM
137	NM
142	NM
146	NM

Sub-Slab Monitoring Points

Monitoring Point Identification	Vacuum (in. H_2O)	VOC Concentration (ppb)
Room 122A	NM	NM
Room 126A	NM	NM
Room 133A	NM	NM
Room 137A	NM	NM
Room 142A	NM	NM
Room 146A	NM	NM

COMMENTS

No Access.

Notes:

1. Manifold 12 is the manifold pipe for rooms 122 and 126.
   Manifold 13 is the manifold pipe for rooms 134 and 138.
   Manifold 14 is the manifold pipe for rooms 142 and 146.
2. PID = photoionization detector.
3. ppb = parts per billion.
4. ppm = parts per million.
5. in. H_2O = inches of water column.
6. ft = feet.
7. ft/min = feet per minute.
8. cfm = cubic feet per minute.
9. N/A = Not Applicable.
10. NM = Not Measured.

Capuano Center Sub-Slab Depressurization System
Monthly Mechanical Inspection Log

GENERAL INFORMATION

GEI Field Representatives: S. Slater

Start-time of monitoring work: 17:00

Date: 05/31/11

End-time of monitoring work: 18:00

Weather: Overcast, ~60°

System Status: On

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	GEI Identification No.	Calibrant	Successful Calibration
PID (ppb)	ION Sciences	Phocheck + 5000	N/A	100 ppm Isobutylene	Yes
Manometer (in. H_20)	Dwyer	Mark III-475-0000-FM	N/A	N/A	Zeroed before each reading
Hot Wire Thermo-Anemometer (ft/min)	Extech Instruments	407123	N/A	N/A	Zeroed before each reading

OBSERVATIONS AND MEASUREMENTS

ENCLOSURE MEASUREMENTS

Shed Secure? Yes

Condensate Accumulated? No

Condensate Drained? N/A

Combined Influent Flow Rate

Velocity (ft/min)	1,500
Pipe Diameter (ft)	0.33
Average Flow Rate (cfm)	128

System Monitoring Points

Port ID	Typical Vacuum Range (in. H_2O)	Vacuum (in. H_2O)	Typical Range of VOCs (ppb)	VOC Concentration (ppb)
Manifold 12	-0.300 to -0.500	-0.340	0 to 2000	0
Manifold 13	-0.300 to -0.500	-0.383	0 to 5000	0
Manifold 14	-0.300 to -0.500	-0.321	0 to 2000	0
Combined Influent	-0.600 to -0.700	-0.702	0 to 2000	0
Effluent	0.480 to 0.600	0.624	0 to 2000	0

EXTERIOR EXTRACTION MONITORING POINT MEASUREMENTS

Monitoring Point Identification	Status (on/off)	Vacuum (in. H_2O)	VOC Concentration (ppb)
122-1	on	-0.174	0
122-2	on	-0.182	0
122-3	on	-0.185	0
126-1	on	-0.209	0
126-2	on	-0.171	0
126-3	on	NM	NM
134-1	on	NM	NM
134-2	on	NM	NM
134-3	on	-0.298	0
138-1	on	-0.321	0
138-2	on	-0.325	0
138-3	on	NM	NM
142-1	on	-0.234	0
142-2	on	-0.246	0
142-3	on	NM	NM
146-1	on	-0.203	0
146-2	on	NM	NM
146-3	on	NM	NM

Capuano Center Sub-Slab Depressurization System
Monthly Mechanical Inspection Log

INTERIOR MEASUREMENTS

Ambient Air Measurements

Classroom	VOC Concentration (ppb)
122	NM
126	NM
134	NM
138	NM
133	NM
137	NM
142	NM
146	NM

Sub-Slab Monitoring Points

Monitoring Point Identification	Vacuum (in. H_2O)	VOC Concentration (ppb)
Room 122A	NM	NM
Room 126A	NM	NM
Room 133A	NM	NM
Room 137A	NM	NM
Room 142A	NM	NM
Room 146A	NM	NM

COMMENTS

No Access.

Notes:

1. Manifold 12 is the manifold pipe for rooms 122 and 126.
   Manifold 13 is the manifold pipe for rooms 134 and 138.
   Manifold 14 is the manifold pipe for rooms 142 and 146.
2. PID = photoionization detector.
3. ppb = parts per billion.
4. ppm = parts per million.
5. in. H_2O = inches of water column.
6. ft = feet.
7. ft/min = feet per minute.
8. cfm = cubic feet per minute.
9. N/A = Not Applicable.
10. NM = Not Measured.

Capuano Center Sub-Slab Depressurization System
Monthly Mechanical Inspection Log

GENERAL INFORMATION

GEI Field Representatives: S. Slater

Start-time of monitoring work: 15:00

Date: 06/13/11

End-time of monitoring work: 16:10

Weather: Overcast, ~60°

System Status: On

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	GEI Identification No.	Calibrant	Successful Calibration
PID (ppb)	ION Sciences	Phocheck + 5000	N/A	100 ppm Isobutylene	Yes
Manometer (in. H_20)	Dwyer	Mark III-475-0000-FM	N/A	N/A	Zeroed before each reading
Hot Wire Thermo-Anemometer (ft/min)	Extech Instruments	407123	N/A	N/A	Zeroed before each reading

OBSERVATIONS AND MEASUREMENTS
ENCLOSURE MEASUREMENTS

Shed Secure? Yes

Condensate Accumulated? No

Condensate Drained? N/A

Combined Influent Flow Rate

Velocity (ft/min)	1,467
Pipe Diameter (ft)	0.33
Average Flow Rate (cfm)	125

System Monitoring Points

Port ID	Typical Vacuum Range (in. H_2O)	Vacuum (in. H_2O)	Typical Range of VOCs (ppb)	VOC Concentration (ppb)
Manifold 12	-0.300 to -0.500	-0.323	0 to 2000	0
Manifold 13	-0.300 to -0.500	-0.343	0 to 5000	0
Manifold 14	-0.300 to -0.500	-0.310	0 to 2000	0
Combined Influent	-0.600 to -0.700	-0.633	0 to 2000	139
Effluent	0.480 to 0.600	0.585	0 to 2000	139

EXTERIOR EXTRACTION MONITORING POINT MEASUREMENTS

Monitoring Point Identification	Status (on/off)	Vacuum (in. H_2O)	VOC Concentration (ppb)
122-1	on	-0.204	0
122-2	on	-0.198	0
122-3	on	-0.189	0
126-1	on	-0.220	0
126-2	on	-0.181	0
126-3	on	NM	NM
134-1	on	NM	NM
134-2	on	NM	NM
134-3	on	-0.304	0
138-1	on	-0.332	0
138-2	on	-0.337	0
138-3	on	NM	NM
142-1	on	-0.227	0
142-2	on	-0.240	0
142-3	on	NM	NM
146-1	on	-0.207	0
146-2	on	NM	NM
146-3	on	NM	NM

Capuano Center Sub-Slab Depressurization System
Monthly Mechanical Inspection Log

INTERIOR MEASUREMENTS

Ambient Air Measurements

Classroom	VOC Concentration (ppb)
122	NM
126	NM
134	NM
138	NM
133	NM
137	NM
142	NM
146	NM

Sub-Slab Monitoring Points

Monitoring Point Identification	Vacuum (in. H_2O)	VOC Concentration (ppb)
Room 122A	NM	NM
Room 126A	NM	NM
Room 133A	NM	NM
Room 137A	NM	NM
Room 142A	NM	NM
Room 146A	NM	NM

COMMENTS

No Access.

Notes:

1. Manifold 12 is the manifold pipe for rooms 122 and 126.
   Manifold 13 is the manifold pipe for rooms 134 and 138.
   Manifold 14 is the manifold pipe for rooms 142 and 146.
2. PID = photoionization detector.
3. ppb = parts per billion.
4. ppm = parts per million.
5. in. H_2O = inches of water column.
6. ft = feet.
7. ft/min = feet per minute.
8. cfm = cubic feet per minute.
9. N/A = Not Applicable.
10. NM = Not Measured.

EPEM Options 2 and 3
Field Monitoring / Inspection Form

GENERAL MONITORING INFORMATION FOR PASSIVE EPEM SYSTEMS

GEI Field Representative(s): N. Slagowski

Property: 95 Franklin Street

Monitoring Start Time: 8:00 AM

Date: 01/05/11

Monitoring End Time: 8:10 AM

Weather: Sunny, ~20°

Option 2 or 3?: Option 2

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	ION Science L.L.C.	PhoCheck 5000	07-01059	100 ppm Isobutylene Time: 07:55	[✓ Y] / N Cal. Reading (ppm): 100

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration

Exterior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor
Interior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor
Epoxy Condition (cracks, peeling, water damage, etc.)?	[✓ good] / fair / poor
Slab or Wall Cracks / Openings That Impair System Performance?	Y / [✓ N]
Downdraft Prevention Cap Present?	Y / [✓ N]

NOTES

1. EPEM = Exposure Pathway Elimination Measure.
2. Option 2 = Consists of a venting system installed in a shallow trench around the interior basement floor perimeter, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
4. Option 3 = Consists of a venting system installed beneath the basement floor, a new concrete floor slab, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
5. ppm = parts per million.
6. PID = photoionization detector.
7. VOC = volatile organic compound.

COMMENTS

1. Window that was previously broken has been fixed.
2. Mrs. Maynard expressed concern about her exterior foundation - she does not feel that it is in good condition.

Reviewed by: ____________________

EPEM Option 1
Field Monitoring / Inspection Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s): N. Slagowski

Date: 01/28/11

Weather: Clear, ~20°

Address: 9 Knowlton

Monitoring Start Time: 7:20 AM

Monitoring End Time: 7:40 AM

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	ION Science L.L.C.	PhoCheck 5000		100 ppm Isobutylene Time: 07:15	Y / N Cal. Reading (ppm): 99.1
Manometer (in. H_2O)	Dwyer	Mark 111-475-0 Series		N/A	Zeroed before each reading? Y / N

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration		Pressure/VOC Measurements			
		Monitoring Point	Pressure (in. H_2O)	VOC (ppm)	Location Description (e.g., distance from foundation walls)
Radon Fan On?	[✓ Y] / N	System influent pipe	-0.6	0.000	Under Stairs
Exterior Fan Condition (housing, wires, etc)?	good / fair / poor	SS1	-0.02	0.00	About one foot from water heater
Excessive fan noise?	Y / [✓ N]				
Interior Extraction Pipe Condition (cracks, damage, etc)?	[✓ good] / fair / poor				
Exterior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor				
Leaks Around Slab Penetrations?	Y / [✓ N]				
Slab or Wall Cracks / Openings That Impair System Performance?	Y / [✓ N]				

NOTES:

1. ppm = parts per million.
2. PID = photoionization detector.
3. N/A = Not Applicable.
4. VOC = volatile organic compound.
5. in. H_2O = inches of water column.
6. SSDS = Sub-slab Depressurization System.

COMMENTS:

1. Installed SSDS stickers 1/31/11.

Reviewed by: ____________________

EPEM Option 1
Field Monitoring / Inspection Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s):	N. Slagowski	**Address:**	13 Knowlton Street
		Monitoring Start Time:	9:30 AM
Date:	01/31/11	**Monitoring End Time:**	9:45 AM
Weather:	Clear, ~20°		

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	ION Science L.L.C.	PhoCheck 5000		100 ppm Isobutylene Time: 08:55	Y / N Cal. Reading (ppm): 99.8
Manometer (in. H_2O)	Dwyer	Mark 111-475-0 Series		N/A	Zeroed before each reading? Y / N

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration		Pressure/VOC Measurements			
		Monitoring Point	Pressure (In. H_2O)	VOC (ppm)	Location Description (e.g., distance from foundation walls)
Radon Fan On?	[✓ Y] / N	System influent pipe	-0.6	0.000	Near stairs by laundry room
Exterior Fan Condition (housing, wires, etc)?	good / fair / poor	SS1	-0.06	0.00	Between boiler and an extraction point
Excessive fan noise?	Y / [✓ N]				
Interior Extraction Pipe Condition (cracks, damage, etc)?	[✓ good] / fair / poor				
Exterior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor				
Leaks Around Slab Penetrations?	Y / [✓ N]				
Slab or Wall Cracks / Openings That Impair System Performance?	Y / [✓ N]				

NOTES:

1. ppm = parts per million.
2. PID = photoionization detector.
3. N/A = Not Applicable.
4. VOC = volatile organic compound.
5. in. H_2O = inches of water column.
6. SSDS = Sub-slab Depressurization System.

COMMENTS:

1. Installed SSDS stickers.
2. Wall around utility room has been taken down. The kitchen stove is torn up, and the kitchen looks relatively unusable. There is a hole under the kitchen sink cabinet.

Reviewed by: ____________________

EPEM Option 1
Field Monitoring / Inspection Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s): N. Slagowski

Date: 01/31/11

Weather: Clear, ~20°

Address: 103 Washington Street

Monitoring Start Time: 10:00 AM

Monitoring End Time: 10:25 AM

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	ION Science L.L.C.	PhoCheck 5000		100 ppm Isobutylene Time: 08:50	[✓ Y] / N Cal. Reading (ppm): 99.8
Manometer (in. H_2O)	Dwyer	Mark 111-475-0 Series		N/A	Zeroed before each reading? [✓ Y] / N

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration		Pressure/VOC Measurements			
		Monitoring Point	Pressure (in. H_2O)	VOC (ppm)	Location Description (e.g., distance from foundation walls)
Radon Fan On?	Y / [✓ N]	Extraction Point in garage	0.0	0.000	Inside main garage building
Exterior Fan Condition (housing, wires, etc)?	[✓ good] / fair / poor	Extraction Point in raised slab	0.0	0.000	Room off of rear of garage - slab is raised from main part of building
Excessive fan noise?	Y / [✓ N]	SS1	0.0	0.000	Near rear garage door that opens to Franklin Street
Interior Extraction Pipe Condition (cracks, damage, etc)?	[✓ good] / fair / poor	SS2	N/A	N/A	Covered? Not found
Exterior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor				
Leaks Around Slab Penetrations?	Y / [✓ N]				
Slab or Wall Cracks / Openings That Impair System Performance?	Y / [✓ N]				

NOTES:

1. ppm = parts per million.
2. PID = photoionization detector.
3. N/A = Not Applicable.
4. VOC = volatile organic compound.
5. in. H_2O = inches of water column.
6. SSDS = Sub-slab Depressurization System.

COMMENTS:

1. Placed SSDS stickers on extraction pipe with manometer in main garage room. Garage operator's son noted that system had not been running for a while. Later learned that his father shut off the system because he has been paying the electricity bills since the start of operation and has no reimbursement. I told him I'd get back to him. Later confirmed that garage owners (who also own 99 Franklin Street) have been receiving reimbursement checks. Garage tenants are owners of 105-107 Washington Street.

Reviewed by: ____________________

EPEM Options 2 and 3
Field Monitoring / Inspection Form

GENERAL MONITORING INFORMATION FOR PASSIVE EPEM SYSTEMS

GEI Field Representative(s): N. Slagowski

Date: 02/03/11

Weather: Snow, ~20°

Property: 91-93 Franklin Street

Monitoring Start Time: 5:50 PM

Monitoring End Time: 6:10 PM

Option 2 or 3?: Option 3

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	ION Science L.L.C.	PhoCheck 5000	07-01059	100 ppm Isobutylene Time: 17:45	Y / N Cal. Reading (ppm): 99.9

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration

Exterior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor
Interior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor
Epoxy Condition (cracks, peeling, water damage, etc.)?	[✓ good] / fair / poor
Slab or Wall Cracks / Openings That Impair System Performance?	Y / [✓ N]
Downdraft Prevention Cap Present?	[✓ Y] / N

NOTES

1. EPEM = Exposure Pathway Elimination Measure.
2. Option 2 = Consists of a venting system installed in a shallow trench around the interior basement floor perimeter, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
4. Option 3 = Consists of a venting system installed beneath the basement floor, a new concrete floor slab, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
5. ppm = parts per million.
6. PID = photoionization detector.
7. VOC = volatile organic compound.

COMMENTS

1. Seam between wall and floor on side facing Capuano school is noticeable, took photo.
2. Brick skirt is flaking onto epoxy.
3. Basement used for storage and laundry and there are two floor heights.
4. Ceiling height measurements: Low floor height: 86 inches
   High floor height: 73 inches.

Reviewed by: ____________________

EPEM Options 2 and 3
Field Monitoring / Inspection Form

GENERAL MONITORING INFORMATION FOR PASSIVE EPEM SYSTEMS

GEI Field Representative(s): N. Slagowski

Date: 02/03/11

Weather: Light snow, ~20°

Property: 166-168 Glen Street

Monitoring Start Time: 7:50 AM

Monitoring End Time: 8:15 AM

Option 2 or 3?: Option 3

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	ION Science L.L.C.	PhoCheck 5000	07-01059	100 ppm Isobutylene Time: 07:50	[✓ Y] / N Cal. Reading (ppm): 99.1

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration

Exterior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor
Interior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor
Epoxy Condition (cracks, peeling, water damage, etc.)?	[✓ good] / fair / poor
Slab or Wall Cracks / Openings That Impair System Performance?	Y / [✓ N]
Downdraft Prevention Cap Present?	Y / [✓ N]

NOTES

1. EPEM = Exposure Pathway Elimination Measure.
2. Option 2 = Consists of a venting system installed in a shallow trench around the interior basement floor perimeter, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
4. Option 3 = Consists of a venting system installed beneath the basement floor, a new concrete floor slab, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
5. ppm = parts per million.
6. PID = photoionization detector.
7. VOC = volatile organic compound.

COMMENTS

1. Some storage areas were not accessible, so could not observe walls in storage areas.
2. Door in chimney has signs of dripping below it.
3. Column not fully epoxied behind water heater.
4. Near outside door to bulkhead joint not epoxied, PID reading = 0.000 ppm.
5. The bulkhead stairs have some dents in the concrete, and might not be completely covered in epoxy.
6. Measured ceiling height to joist in front of basement: 85 inches.

Reviewed by: ____________________

EPEM Option 1
Field Monitoring / Inspection Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s): S. Slater

Address: 18 Morton Street

Monitoring Start Time: 6:00 PM

Date: 02/23/11

Monitoring End Time: 6:10 PM

Weather: Mostly cloudy, ~40°

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	ION Science L.L.C.	PhoCheck 5000		100 ppm Isobutylene Time: 17:45	Y / N Cal. Reading (ppm): 101
Manometer (in. H_2O)	Dwyer	Mark 111-475-0 Series		N/A	Zeroed before each reading? Y / N

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration		Pressure/VOC Measurements			
		Monitoring Point	Pressure (in. H_2O)	VOC (ppm)	Location Description (e.g., distance from foundation walls)
Radon Fan On?	**Y** / N	SS1	-0.275	NM	
Exterior Fan Condition (housing, wires, etc)?	**good** / fair / poor	SS2	-0.012	NM	
Excessive fan noise?	Y / **N**	permanent manometer	-2.4	NM	Measured -2.407 with hand-held manometer
Interior Extraction Pipe Condition (cracks, damage, etc)?	**good** / fair / poor				
Exterior Pipe Condition (cracks, damage, etc.)?	**good** / fair / poor				
Leaks Around Slab Penetrations?	Y / **N**				
Slab or Wall Cracks / Openings That Impair System Performance?	**Y** / N				

NOTES:

1. ppm = parts per million.
2. PID = photoionization detector.
3. N/A = Not Applicable.
4. VOC = volatile organic compound.
5. in. H_2O = inches of water column.
6. NM = Not Measured.

COMMENTS:

1. The owner had dug a sump along the north wall in the front central portion of the basement.
2. Measured ceiling height to joist in front of basement: 80 inches.
3. Measured ceiling height to joist in back of basement: 78 inches.

Reviewed by: ______________________

EPEM Options 2 and 3
Field Monitoring / Inspection Form

GENERAL MONITORING INFORMATION FOR PASSIVE EPEM SYSTEMS

GEI Field Representative(s): S. Slater

Date: 02/23/11

Weather: Sunny, ~30°

Property: 27 Tufts Street

Monitoring Start Time: 10:00 AM

Monitoring End Time: 10:30 AM

Option 2 or 3?: Option 3

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	ION Science L.L.C.	PhoCheck 5000	07-01059	100 ppm Isobutylene Time: 09:45	[✓ Y] / N Cal. Reading (ppm): 102

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration

Exterior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor
Interior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor
Epoxy Condition (cracks, peeling, water damage, etc.)?	[✓ good] / fair / poor
Slab or Wall Cracks / Openings That Impair System Performance?	Y / [✓ N]
Downdraft Prevention Cap Present?	Y / [✓ N]

NOTES

1. EPEM = Exposure Pathway Elimination Measure.
2. Option 2 = Consists of a venting system installed in a shallow trench around the interior basement floor perimeter, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
4. Option 3 = Consists of a venting system installed beneath the basement floor, a new concrete floor slab, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
5. ppm = parts per million.
6. PID = photoionization detector.
7. VOC = volatile organic compound.

COMMENTS

1. Applied EPEM sticker.
2. Measured ceiling height to joist in basement: 80 inches.

Reviewed by: ____________________

EPEM Options 2 and 3
Field Monitoring / Inspection Form

GENERAL MONITORING INFORMATION FOR PASSIVE EPEM SYSTEMS

GEI Field Representative(s): S. Slater

Date: 02/26/11

Weather: Partly cloudy, ~30°

Property: 17 Knowlton Street

Monitoring Start Time: 9:45 AM

Monitoring End Time: 10:05 AM

Option 2 or 3?: Option 3

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	ION Science L.L.C.	PhoCheck 5000	07-01059	100 ppm Isobutylene Time: 09:30	Y / N Cal. Reading (ppm): 102

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration

Exterior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor
Interior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor
Epoxy Condition (cracks, peeling, water damage, etc.)?	[✓ good] / fair / poor
Slab or Wall Cracks / Openings That Impair System Performance?	Y / [✓ N]
Downdraft Prevention Cap Present?	[✓ Y] / N

NOTES

1. EPEM = Exposure Pathway Elimination Measure.
2. Option 2 = Consists of a venting system installed in a shallow trench around the interior basement floor perimeter, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
4. Option 3 = Consists of a venting system installed beneath the basement floor, a new concrete floor slab, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
5. ppm = parts per million.
6. PID = photoionization detector.
7. VOC = volatile organic compound.

COMMENTS

1. Measured ceiling height to joist in front of basement: 79 inches.
2. Measured ceiling height to joist in back of basement: 80 inches.

Reviewed by: ______________________

EPEM Options 2 and 3
Field Monitoring / Inspection Form

GENERAL MONITORING INFORMATION FOR PASSIVE EPEM SYSTEMS

GEI Field Representative(s): S. Slater

Date: 02/26/11

Weather: Partly cloudy, ~30°

Property: 17 Knowlton Street

Monitoring Start Time: 9:45 AM

Monitoring End Time: 10:05 AM

Option 2 or 3?: Option 3

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	ION Science L.L.C.	PhoCheck 5000	07-01059	100 ppm Isobutylene Time: 09:30	**Y** / N Cal. Reading (ppm): 102

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration

Exterior Pipe Condition (cracks, damage, etc.)?	**good** / fair / poor
Interior Pipe Condition (cracks, damage, etc.)?	**good** / fair / poor
Epoxy Condition (cracks, peeling, water damage, etc.)?	**good** / fair / poor
Slab or Wall Cracks / Openings That Impair System Performance?	Y / **N**
Downdraft Prevention Cap Present?	**Y** / N

NOTES

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4. Option 3 = Consists of a venting system installed beneath the basement floor, a new concrete floor slab, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
5. ppm = parts per million.
6. PID = photoionization detector.
7. VOC = volatile organic compound.

COMMENTS

1. Measured ceiling height to joist in front of basement: 79 inches.
2. Measured ceiling height to joist in back of basement: 80 inches.

Reviewed by: ____________________

EPEM Option 1
Field Monitoring / Inspection Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s): S. Slater

Date: 02/25/11

Weather: Partly cloudy, ~30°

Address: 23 Tufts Street

Monitoring Start Time: 10:00 AM

Monitoring End Time: 10:30 AM

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	ION Science L.L.C.	PhoCheck 5000		100 ppm Isobutylene Time: 09:30	[✓ Y] / N Cal. Reading (ppm): 102
Manometer (in. H_2O)	Dwyer	Mark 111-475-0 Series		N/A	Zeroed before each reading? [✓ Y] / N

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration		Pressure/VOC Measurements			
		Monitoring Point	Pressure (in. H_2O)	VOC (ppm)	Location Description (e.g., distance from foundation walls)
Radon Fan On?	[✓ Y] / N	permanent manometer	-3.502	NM	
Exterior Fan Condition (housing, wires, etc)?	[✓ good] / fair / poor				
Excessive fan noise?	Y / [✓ N]				
Interior Extraction Pipe Condition (cracks, damage, etc)?	[✓ good] / fair / poor				
Exterior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor				
Leaks Around Slab Penetrations?	Y / [✓ N]				
Slab or Wall Cracks / Openings That Impair System Performance?	Y / [✓ N]				

NOTES:

1. ppm = parts per million.
2. PID = photoionization detector.
3. N/A = Not Applicable.
4. VOC = volatile organic compound.
5. in. H_2O = inches of water column.
6. NM = Not Measured.

COMMENTS:

1. No additional sub-slab points found.

Reviewed by: ______________________

EPEM Option 1
Field Monitoring / Inspection Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s):	S. Slater	**Address:**	31-33 Knowlton Street
		Monitoring Start Time:	10:00 AM
Date:	02/26/11	**Monitoring End Time:**	10:30 AM
Weather:	Partly cloudy, ~30°		

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	ION Science L.L.C.	PhoCheck 5000		100 ppm Isobutylene Time: 09:30	Y / N Cal. Reading (ppm): 102
Manometer (in. H_2O)	Dwyer	Mark 111-475-0 Series		N/A	Zeroed before each reading? Y / N

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration		Pressure/VOC Measurements			
		Monitoring Point	Pressure (in. H_2O)	VOC (ppm)	Location Description (e.g., distance from foundation walls)
Radon Fan On?	**Y** / N	SS1	-0.017	NM	
Exterior Fan Condition (housing, wires, etc)?	**good** / fair / poor	SS2	-0.06	NM	Fluctuating, goes to zero often
Excessive fan noise?	Y / **N**	permanent manometer	-2.449	NM	
Interior Extraction Pipe Condition (cracks, damage, etc)?	**good** / fair / poor	front pipe	-2.434	NM	Not covered
Exterior Pipe Condition (cracks, damage, etc.)?	**good** / fair / poor				
Leaks Around Slab Penetrations?	**Y** / N				
Slab or Wall Cracks / Openings That Impair System Performance?	**Y** / N				

NOTES:

1. ppm = parts per million.
2. PID = photoionization detector.
3. N/A = Not Applicable.
4. VOC = volatile organic compound.
5. in. H_2O = inches of water column.
6. NM = Not Measured.

COMMENTS:

1. Cracks in floor show signs of seepage. Some seepage around floor penetrations.

Reviewed by: ____________________

EPEM Options 2 and 3
Field Monitoring / Inspection Form

GENERAL MONITORING INFORMATION FOR PASSIVE EPEM SYSTEMS

GEI Field Representative(s): S. Slater
N. Slagowski

Date: 03/04/11

Weather: Partly cloudy, ~25°

Property: 10 Morton Street

Monitoring Start Time: 9:15 AM

Monitoring End Time: 9:25 AM

Option 2 or 3?: Option 3

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	ION Science L.L.C.	PhoCheck 5000	07-01059	100 ppm Isobutylene Time: 07:55	Y / N Cal. Reading (ppm): 100

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration

Exterior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor	
Interior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor	
Epoxy Condition (cracks, peeling, water damage, etc.)?	good / [✓ fair] / poor	
Slab or Wall Cracks / Openings That Impair System Performance?	Y / [✓ N]	
Downdraft Prevention Cap Present?	[✓ Y] / N	Whirling kind

NOTES

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2. Option 2 = Consists of a venting system installed in a shallow trench around the interior basement floor perimeter, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
4. Option 3 = Consists of a venting system installed beneath the basement floor, a new concrete floor slab, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
5. ppm = parts per million.
6. PID = photoionization detector.
7. VOC = volatile organic compound.

COMMENTS

1. Epoxy to sill in this EPEM.
2. Epoxy has signs of water around bulkhead for about a 10 foot radius.
3. Measured ceiling height to joist in front of basement: 77 inches.
4. Measured ceiling height to joist in front of basement: 75.5 inches.

Reviewed by: ______________________

EPEM Options 2 and 3
Field Monitoring / Inspection Form

GENERAL MONITORING INFORMATION FOR PASSIVE EPEM SYSTEMS

GEI Field Representative(s):	N. Slagowski	**Property:**	32 Knowlton Street
Date:	03/07/11	**Monitoring Start Time:**	7:35 AM
		Monitoring End Time:	7:50 AM
Weather:	Light rain, ~54°	**Option 2 or 3?:**	Option 3

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	ION Science L.L.C.	PhoCheck 5000	07-01059	100 ppm Isobutylene Time: 07:30	**Y** / N Cal. Reading (ppm): 101

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration

Exterior Pipe Condition (cracks, damage, etc.)?	**good** / fair / poor	
Interior Pipe Condition (cracks, damage, etc.)?	**good** / fair / poor	
Epoxy Condition (cracks, peeling, water damage, etc.)?	**good** / fair / poor	
Slab or Wall Cracks / Openings That Impair System Performance?	Y / **N**	
Downdraft Prevention Cap Present?	**Y** / N	Whirly cap

NOTES

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4. Option 3 = Consists of a venting system installed beneath the basement floor, a new concrete floor slab, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
5. ppm = parts per million.
6. PID = photoionization detector.
7. VOC = volatile organic compound.

COMMENTS

1. Measured ceiling height to joist in front of basement: 78.5 inches.
2. Measured ceiling height to joist in back of basement: 77 inches.
3. Water was present in the bulkhead area. It appears to be running down from the top, near the driveway. There are cracks on the top stair. Rug near the bulkhead was wet.
4. Gutter still needs to be repaired.

Reviewed by: ____________________

EPEM Option 1
Field Monitoring / Inspection Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s):	N. Slagowski	Address:	13 Morton Street
		Monitoring Start Time:	10:35 AM
Date:	03/08/11	Monitoring End Time:	10:55 AM
Weather:	Sunny, ~30°		

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	ION Science L.L.C.	PhoCheck 5000		100 ppm Isobutylene Time: 10:30	Y / N Cal. Reading (ppm): 99.8
Manometer (in. H_2O)	Dwyer	Mark 111-475-0 Series		N/A	Zeroed before each reading? Y / N

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration		Pressure/VOC Measurements			
		Monitoring Point	Pressure (in. H_2O)	VOC (ppm)	Location Description (e.g., distance from foundation walls)
Radon Fan On?	[✓ Y] / N	Sub-slab point	-1.76	0	Near furnaces & one of the extraction points.
Exterior Fan Condition (housing, wires, etc)?	[✓ good] / fair / poor	permanent manometer	-2.6	0	Near bulkhead door
Excessive fan noise?	Y / [✓ N]				
Interior Extraction Pipe Condition (cracks, damage, etc)?	[✓ good] / fair / poor				
Exterior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor				
Leaks Around Slab Penetrations?	Y / [✓ N]				
Slab or Wall Cracks / Openings That Impair System Performance?	Y / [✓ N]				

NOTES:

1. ppm = parts per million.
2. PID = photoionization detector.
3. N/A = Not Applicable.
4. VOC = volatile organic compound.
5. in. H_2O = inches of water column.
6. SSDS = Sub-slab Depressurization System.

COMMENTS:

1. Appears to be new flooring and walls since last inspection. In photos from June 2007, oil tanks were near bulkhead, and have been removed and room built in.
2. Measured ceiling height to joist in front of basement: 82.5 inches.
3. Measured ceiling height to joist in back of basement: 82.5 inches. Room near bulkhead has about 1/2 inch of flooring over slab.
4. No light switches found in basement, so would be helpful to bring a flashlight.
5. SSDS stickers placed on extraction point with permanent manometer.

Reviewed by: ______________________

EPEM Options 2 and 3
Field Monitoring / Inspection Form

GENERAL MONITORING INFORMATION FOR PASSIVE EPEM SYSTEMS

GEI Field Representative(s):	S. Slater	**Property:**	35-37 Knowlton St.
		Monitoring Start Time:	10:00 AM
Date:	03/10/11	**Monitoring End Time:**	10:15 AM
Weather:	Overcast, ~40°	**Option 2 or 3?:**	Option 3

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	ION Science L.L.C.	PhoCheck 5000	07-01059	100 ppm Isobutylene Time: 08:15	[✓ Y] / N Cal. Reading (ppm): 99.9

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration

Exterior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor
Interior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor
Epoxy Condition (cracks, peeling, water damage, etc.)?	[✓ good] / fair / poor
Slab or Wall Cracks / Openings That Impair System Performance?	Y / [✓ N]
Downdraft Prevention Cap Present?	[✓ Y] / N

NOTES

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4. Option 3 = Consists of a venting system installed beneath the basement floor, a new concrete floor slab, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
5. ppm = parts per million.
6. PID = photoionization detector.
7. VOC = volatile organic compound.

COMMENTS

1. Hot water heater is steadily discharging water to floor.
2. Condensation is dripping along the length of a copper water pipe running along the basement ceiling.
3. Some rust showing through the epoxy--it appears to be rust from the mesh used to hold the epoxy and stucco.
4. Ceiling height measurements: Back of basement: 6 feet, 7 inches
   Front of basement: 6 feet, 8.5 inches.

Reviewed by: ______________________

EPEM Options 2 and 3
Field Monitoring / Inspection Form

GENERAL MONITORING INFORMATION FOR PASSIVE EPEM SYSTEMS

GEI Field Representative(s): S. Slater

Date: 03/10/11

Weather: Overcast, ~39°

Property: 95 Franklin Street

Monitoring Start Time: 8:25 AM

Monitoring End Time: 8:40 AM

Option 2 or 3?: Option 2

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	ION Science L.L.C.	PhoCheck 5000	07-01059	100 ppm Isobutylene Time: 08:15	[✓ Y] / N Cal. Reading (ppm): 102

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration

Exterior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor
Interior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor
Epoxy Condition (cracks, peeling, water damage, etc.)?	[✓ good] / fair / poor
Slab or Wall Cracks / Openings That Impair System Performance?	Y / [✓ N]
Downdraft Prevention Cap Present?	Y / [✓ N]

NOTES

1. EPEM = Exposure Pathway Elimination Measure.
2. Option 2 = Consists of a venting system installed in a shallow trench around the interior basement floor perimeter, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
4. Option 3 = Consists of a venting system installed beneath the basement floor, a new concrete floor slab, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
5. ppm = parts per million.
6. PID = photoionization detector.
7. VOC = volatile organic compound.

COMMENTS

1. Measured ceiling height to joist in front of basement: 65 inches.
2. Measured ceiling height to joist in back of basement: 64 inches.

Reviewed by: ______________________

EPEM Options 2 and 3
Field Monitoring / Inspection Form

GENERAL MONITORING INFORMATION FOR PASSIVE EPEM SYSTEMS

GEI Field Representative(s): B. Simons

Date: 03/23/11

Weather: Cloudy, ~30°

Property: 4 Morton Street

Monitoring Start Time: 2:00 PM

Monitoring End Time: 2:30 PM

Option 2 or 3?: Option 3

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	ION Science L.L.C.	PhoCheck 5000	07-01059	N/A	Y / N Cal. Reading (ppm): N/A

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration

Exterior Pipe Condition (cracks, damage, etc.)?	good / [✓ fair] / poor
Interior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor
Epoxy Condition (cracks, peeling, water damage, etc.)?	[✓ good] / fair / poor
Slab or Wall Cracks / Openings That Impair System Performance?	Y / [✓ N]
Downdraft Prevention Cap Present?	Y / [✓ N]

NOTES

1. EPEM = Exposure Pathway Elimination Measure.
2. Option 2 = Consists of a venting system installed in a shallow trench around the interior basement floor perimeter, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
4. Option 3 = Consists of a venting system installed beneath the basement floor, a new concrete floor slab, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
5. ppm = parts per million.
6. PID = photoionization detector.
7. VOC = volatile organic compound.
8. N/A = Not Applicable.

COMMENTS

1. Measured ceiling height to joist in front of basement: 77 inches.
2. Measured ceiling height to joist in back of basement: 76 inches.
3. Exterior pipe brackets loose.

Reviewed by: ____________________

EPEM Options 2 and 3
Field Monitoring / Inspection Form

GENERAL MONITORING INFORMATION FOR PASSIVE EPEM SYSTEMS

GEI Field Representative(s): N. Slagowski

Date: 04/09/11

Weather: Sunny, ~50°

Property: 19-19A Morton Street

Monitoring Start Time: 9:30 AM

Monitoring End Time: 9:45 AM

Option 2 or 3?: Option 3

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	ION Science L.L.C.	PhoCheck 5000	07-01059	100 ppm Isobutylene	Y / [✓ N] Cal. Reading (ppm): 50

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration

Exterior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor
Interior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor
Epoxy Condition (cracks, peeling, water damage, etc.)?	[✓ good] / fair / poor
Slab or Wall Cracks / Openings That Impair System Performance?	Y / [✓ N]
Downdraft Prevention Cap Present?	[✓ Y] / N

NOTES

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4. Option 3 = Consists of a venting system installed beneath the basement floor, a new concrete floor slab, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
5. ppm = parts per million.
6. PID = photoionization detector.
7. VOC = volatile organic compound.

COMMENTS

1. Measured ceiling height to joist in front of basement: 81 inches.
2. Measured ceiling height to joist in back of basement: 83 inches.
3. Re-epoxy of floor-wall seal appears to be in good condition. Took some photos of new epoxy.

Reviewed by: ____________________

EPEM Options 2 and 3
Field Monitoring / Inspection Form

GENERAL MONITORING INFORMATION FOR PASSIVE EPEM SYSTEMS

GEI Field Representative(s): N. Slagowski

Date: 06/08/11

Weather: Sunny, ~80°

Property: 95R Franklin

Monitoring Start Time: 7:05 AM

Monitoring End Time: 7:20 AM

Option 2 or 3?: Option 2

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	ION Science L.L.C.	PhoCheck 5000	07-01059	100 ppm isobutylene	[✓ Y] / N Cal. Reading (ppm): 104

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration

Exterior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor
Interior Pipe Condition (cracks, damage, etc.)?	[✓ good] / fair / poor
Epoxy Condition (cracks, peeling, water damage, etc.)?	[✓ good] / fair / poor
Slab or Wall Cracks / Openings That Impair System Performance?	Y / [✓ N]
Downdraft Prevention Cap Present?	[✓ Y] / N

NOTES

1. EPEM = Exposure Pathway Elimination Measure.
2. Option 2 = Consists of a venting system installed in a shallow trench around the interior basement floor perimeter, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
4. Option 3 = Consists of a venting system installed beneath the basement floor, a new concrete floor slab, cement stucco applied to the walls, and an epoxy vapor barrier applied to the walls and floor.
5. ppm = parts per million.
6. PID = photoionization detector.
7. VOC = volatile organic compound.

COMMENTS

1. Measured ceiling height in front of basement: 77.5 inches.
2. Measured ceiling height in back of basement: 78 inches.
3. Measured height to beam running through basement: 71 inches.
4. Applied EPEM sticker to extraction pipe.
5. PID readings ranged from 0.25 to 0.65 ppm.
6. Storage items obscuring some wall and floor areas.
7. There appears to be two exhaust pipes.

Reviewed by: ____________________

60 Tufts Street
SSDS Field Monitoring Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s):	N. Slagowski	**Monitoring Start Time:**	7:45
		Monitoring End Time:	8:00
Date:	01/28/11		
Weather:	Clear, ~20°		

INSTRUMENTATION INFORMATION

Instrument	**Manufacturer**	**Model**	**Serial No.**	**Calibrated To:**	**Successful Calibration?**
PID (ppm)	ION Science L.L.C.	PhoCheck 5000	79880-447	100 ppm Isobutylene Time: 07:15	Y / N Cal. Reading (ppm): 99.1
Manometer (in. H_2O)	Dwyer	Mark III-475-0 Series	N/A	N/A	Zeroed before each reading? Y / N
Anemomaster (feet^3 per minute)	Kanomax	A034	5166	N/A	N/A

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration	
Blower Enclosure Secure?	Y / N
Blower On?	Y / N
Influent Condensate Accumulated?	Y / N
Effluent Condensate Accumulated?	Y / N
Condensate Drained?	Y / **N**
Hour Meter Reading	N/A
VFD Setting (Hz)	60

Pressure/VOC Measurements		
Monitoring Point	**Pressure (in. H_2O)**	**VOC (ppm)**
North Header	NM*	NM*
South Header	NM*	NM*
Combined System Influent	-5.01	0
System Effluent	0.21	0
Blower Filter Inlet	-9	N/A
Blower Filter Outlet	-21	N/A
Ambient Air Outside Blower	N/A	0

System Flow Rate Data	
Velocity (feet per minute)	**System Flowrate (CFM): = (PI * r^2) * ft per min**
2200	~190 (calculated)

NOTES:

1. ppm = parts per million.
2. CFM = cubic feet per minute.
3. PID = photoionization detector.
4. N/A = Not Applicable.
5. VOC = volatile organic compound.
6. in. H_2O = inches of water column.
7. VFD = variable frequency drive.
8. Hz = Hertz.
9. NM = Not Measured.

COMMENTS:

1. Condensate not drained because it is frozen inside pipe.

* Note: Headers not measured because we did not have access to the building.

60 Tufts Street
SSDS Field Monitoring Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s): N. Slagowski

Monitoring Start Time: 13:10

Monitoring End Time: 13:40

Date: 02/28/11

Weather: Light rain, ~30°

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	PhoCheck	1000+	N/A	100 ppm Isobutylene Time:	Y / N Cal. Reading (ppm):
Manometer (in. H_2O)	Dwyer	Mark III-475-0 Series	N/A	N/A	Zeroed before each reading? Y / N
Anemomaster (feet^3 per minute)	Kanomax	A034	5166	N/A	N/A

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration

Blower Enclosure Secure?	Y / N
Blower On?	Y / N
Influent Condensate Accumulated?	Y / N
Effluent Condensate Accumulated?	Y / N
Condensate Drained?	Y / N
Hour Meter Reading	N/A
VFD Setting (Hz)	60

Pressure/VOC Measurements

Monitoring Point	Pressure (in. H_2O)	VOC (ppm)
North Header	NM*	NM*
South Header	NM*	NM*
Combined System Influent	-5.13	0
System Effluent	N/A	0
Blower Filter Inlet	NM	N/A
Blower Filter Outlet	NM	N/A
Ambient Air Outside Blower	N/A	0

System Flow Rate Data

Velocity (feet per minute)	System Flowrate (CFM): = (PI * r^2) * ft per min
NM	Not recorded

NOTES:

1. ppm = parts per million.
2. CFM = cubic feet per minute.
3. PID = photoionization detector.
4. N/A = Not Applicable.
5. VOC = volatile organic compound.
6. in. H_2O = inches of water column.
7. VFD = variable frequency drive.
8. Hz = Hertz.
9. NM = Not Measured.

COMMENTS:

* Note: Headers not measured because we did not have access to the building.

60 Tufts Street
SSDS Field Monitoring Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s): N. Slagowski

Date: 03/18/11

Weather: Cloudy, Windy, ~60°

Monitoring Start Time: 11:30

Monitoring End Time: 11:55

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	PhoCheck	5000+	N/A	100 ppm Isobutylene Time:	Y / N Cal. Reading (ppm): 101
Manometer (in. H_2O)	Dwyer	Mark III-475-0 Series	N/A	N/A	Zeroed before each reading? Y / N
Anemomaster (feet^3 per minute)	Kanomax	A034	5166	N/A	N/A

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration	
Blower Enclosure Secure?	Y / N
Blower On?	Y / N
Influent Condensate Accumulated?	Y / N
Effluent Condensate Accumulated?	Y / N
Condensate Drained?	Y / N
Hour Meter Reading	N/A
VFD Setting (Hz)	60

Pressure/VOC Measurements		
Monitoring Point	Pressure (in. H_2O)	VOC (ppm)
North Header	NM*	NM*
South Header	NM*	NM*
Combined System Influent	-4.92	0
System Effluent	N/A	0
Blower Filter Inlet	-8	N/A
Blower Filter Outlet	-22	N/A
Ambient Air Outside Blower	N/A	0

System Flow Rate Data	
Velocity (feet per minute)	System Flowrate (CFM): = (PI * r^2) * ft per min
NM	290

NOTES:

1. ppm = parts per million.
2. CFM = cubic feet per minute.
3. PID = photoionization detector.
4. N/A = Not Applicable.
5. VOC = volatile organic compound.
6. in. H_2O = inches of water column.
7. VFD = variable frequency drive.
8. Hz = Hertz.
9. NM = Not Measured.

COMMENTS:

1. Intentionally triggered alarm (shut off system briefly) to test sensaphone calling. Telephone number is 339-221-3020.

- Note: Headers not measured because we did not have access to the building.

60 Tufts Street
SSDS Field Monitoring Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s):	N. Slagowski	**Monitoring Start Time:**	8:50
		Monitoring End Time:	11:30
Date:	04/01/11		
Weather:	Rain, Snow, Windy, ~30°		

INSTRUMENTATION INFORMATION

Instrument	**Manufacturer**	**Model**	**Serial No.**	**Calibrated To:**	**Successful Calibration?**
PID (ppm)	Thermo Env. Instruments, Inc.	580B	79880-447	100 ppm Isobutylene Time: 08:50	**Y** / N Cal. Reading (ppm): 99.9
Manometer (in. H_2O)	Dwyer	Mark III-475-0 Series	N/A	N/A	Zeroed before each reading? **Y** / N
Anemomaster (feet^3 per minute)	Kanomax	A034	5166	N/A	N/A

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration	
Blower Enclosure Secure?	**Y** / N
Blower On?	**Y** / N
Influent Condensate Accumulated?	**Y** / N
Effluent Condensate Accumulated?	Y / **N**
Condensate Drained?	**Y** / N
Hour Meter Reading	N/A
VFD Setting (Hz)	60

Pressure/VOC Measurements

Monitoring Point	**Pressure (In. H_2O)**	**VOC (ppm)**
North Header	NM*	NM*
South Header	NM*	NM*
Combined System Influent	-4.1	1.4
System Effluent	N/A	0
Blower Filter Inlet	-9	N/A
Blower Filter Outlet	-21	N/A
Ambient Air Outside Blower	N/A	0

System Flow Rate Data

Velocity (feet per minute)	**System Flowrate (CFM): = (PI * r^2) * ft per min**
NM	295

NOTES:

1. ppm = parts per million.
2. CFM = cubic feet per minute.
3. PID = photoionization detector.
4. N/A = Not Applicable.
5. VOC = volatile organic compound.
6. in. H_2O = inches of water column.
7. VFD = variable frequency drive.
8. Hz = Hertz.
9. NM = Not Measured.

COMMENTS:

1. Changed blower filter, pressure difference did not immediately change.
2. Too many storage items in Unit 1 Storage to access EP & headers.
3. Access to building provided by Property Manager. Derrick (Unit 1 Tenant) provided access to Unit 1 and Unit 1 Storage, and Kate Castle provided access to Unit 4.

* Note: Cannot get to North 1 & 2 as they are 8 to 10 feet above the floor and the ladder is missing..

60 Tufts Street
SSDS Field Monitoring Form

SSDS Indoor Monitoring Points and Extraction Points

4/1/2011

Monitoring Point	Pressure (in. H_2O)	VOC (ppm)	Comments
EP-N1	NM	NM	Not accessible
EP-N2	-3.97	1.4	
EP-N3	-3.99	1.4	
EP-N4	NM	NM	Not accessible
EP-N5	-3.99	1.7	
EP-N6	-4.03	1.2	
EP-N7	-4.12	1.4	
EP-S1	-0.99	1.7	
EP-S2	-1.37	1.4	
EP-S3	-1.8	1.7	
EP-S4	-2.3	1.7	
EP-S5	-1.42	0.0	
EP-S6	-1.8	1.2	
EP-S7	NM	NM	Not accessible
Unit 4 - SS1	-0.06	1.4	
Unit 4 - SS2	-0.19	1.4	
Storage S - SS1	-0.01	1.4	
Storage S - SS2	-0.01	1.4	
Storage S - SS3	-0.04	1.7	
SS10	-0.03	0.7	
SS11	NM	NM	Not on as-built plan, not found
SS12	-0.03	1.4	
SS13	-0.096	0.0	
SS14	-0.02	1.4	
SS15	NM	NM	Not on as-built plan, not found
SS16	NM	NM	Not on as-built plan, not found

60 Tufts Street
SSDS Field Monitoring Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s):	N. Slagowski	**Monitoring Start Time:**	12:35
		Monitoring End Time:	12:55
Date:	05/02/11		
Weather:	Sunny, ~60° .		

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	Thermo Env. Instruments, Inc.	580B	79880-447	100 ppm Isobutylene Time: 12:00	Y / N Cal. Reading (ppm): 99.5
Manometer (in. H_2O)	Dwyer	Mark III-475-0 Series	N/A	N/A	Zeroed before each reading? Y / N
Anemomaster (feet^3 per minute)	Kanomax	A034	5166	N/A	N/A

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration	
Blower Enclosure Secure?	Y / N
Blower On?	Y / N
Influent Condensate Accumulated?	Y / N
Effluent Condensate Accumulated?	Y / N
Condensate Drained?	Y / N
Hour Meter Reading	N/A
VFD Setting (Hz)	60

Pressure/VOC Measurements		
Monitoring Point	Pressure (in. H_2O)	VOC (ppm)
North Header	NM*	NM*
South Header	NM*	NM*
Combined System Influent	-4.82	0.2
System Effluent	0.2	0.2
Blower Filter Inlet	10	N/A
Blower Filter Outlet	22	N/A
Ambient Air Outside Blower	N/A	0.2

System Flow Rate Data	
Velocity (feet per minute)	System Flowrate (CFM): = (PI * r^2) * ft per min
3200	~280 (calculated)

NOTES:

1. ppm = parts per million.
2. CFM = cubic feet per minute.
3. PID = photoionization detector.
4. N/A = Not Applicable.
5. VOC = volatile organic compound.
6. in. H_2O = inches of water column.
7. VFD = variable frequency drive.
8. Hz = Hertz.
9. NM = Not Measured.

COMMENTS:

1. Only a few drops of effluent condensate accumulated.

- Note: Headers not measured because we did not have access to the building.

60 Tufts Street
SSDS Field Monitoring Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s): N. Slagowski

Monitoring Start Time: 11:05

Monitoring End Time: 11:30

Date: 06/13/11

Weather: Overcast, ~60°

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Serial No.	Calibrated To:	Successful Calibration?
PID (ppm)	Thermo Env. Instruments, Inc.	580B	79880-447	100 ppm Isobutylene Time: 11:15	**Y** / N Cal. Reading (ppm): 103
Manometer (in. H_2O)	Dwyer	Mark III-475-0 Series	N/A	N/A	Zeroed before each reading? **Y** / N
Anemomaster (feet^3 per minute)	Kanomax	A034	5166	N/A	N/A

FIELD MEASUREMENTS / OBSERVATIONS

System Status/Configuration

Blower Enclosure Secure?	**Y** / N
Blower On?	**Y** / N
Influent Condensate Accumulated?	Y / **N**
Effluent Condensate Accumulated?	**Y** / N
Condensate Drained?	**Y** / N
Hour Meter Reading	N/A
VFD Setting (Hz)	60

Pressure/VOC Measurements

Monitoring Point	Pressure (In. H_2O)	VOC (ppm)
North Header	NM*	NM*
South Header	NM*	NM*
Combined System Influent	-4.89	0
System Effluent	0.1	0
Blower Filter Inlet	-8	N/A
Blower Filter Outlet	-24	N/A
Ambient Air Outside Blower	N/A	0

System Flow Rate Data

Velocity (feet per minute)	System Flowrate (CFM): = (PI * r^2) * ft per min
3720	318

NOTES:

1. ppm = parts per million.
2. CFM = cubic feet per minute.
3. PID = photoionization detector.
4. N/A = Not Applicable.
5. VOC = volatile organic compound.
6. in. H_2O = inches of water column.
7. VFD = variable frequency drive.
8. Hz = Hertz.
9. NM = Not Measured.

COMMENTS:

1. Only a few drops of effluent condensate accumulated.

* Note: Headers not measured because we did not have access to the building.

50 Tufts Street Sub-Slab Depressurization System
Monthly Monitoring Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s):	L. Welch	**Monitoring Start Time:**	8:10
	N. Slagowski	**Monitoring End Time:**	15:35
Date:	12/22/10		
Weather:	Cloudy, snow/wind later in day		**MEASUREMENTS BEFORE FLOW ADJUSTMENTS**

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Calibrated To:	Successful Calibration?
PID (ppm)	Not used	N/A	N/A	N/A
Manometer (in. H_2O)	Dwyer	Mark III-475-0 Series	N/A	Zeroed before each reading
Anemomaster (CFM)	Kanomax	A034	N/A	N/A

FIELD MEASUREMENTS & OBSERVATIONS

System Status/Configuration	
Fenced Enclosure Secure?	Y
Blower On?	Y
Condensate Accumulated?	N
Condensate Drained?	N/A
Hour Meter Reading?	NM
Lead Carbon Unit?	B
Secondary Carbon Unit?	C
Polish Carbon Unit?	A

Pressure/VOC Measurements

Monitoring Point	Pressure (in. H_2O)	VOC (ppm)	Velocity (ft/min)	Flow (CFM)
West Header	-2.57	137	NM	NM
Center Header	-2.59	215	NM	NM
East Header	-0.5	54	NM	NM
North Header	-2.69	143	NM	NM
South Header	-2.68	100	NM	NM
Combined System	-3.51	NM	NM	NM
Blower Effluent	97.2, meter (13 on gauge, off scale)	NM	NM	NM
Lead Carbon Effluent	NM	NM	NM	NM
Secondary Carbon	NM	NM	NM	NM
System Effluent	NM	NM	NM	NM
Ambient Air	0	NM	NM	NM
Blower Filter Inlet	-12 (gauge)	N/A	N/A	N/A
Blower Filter Outlet	-26 (gauge)	N/A	N/A	N/A

System Flow Rate Data

Velocity (ft/min)	System Flowrate (CFM):
3768	330

Tank Exterior Monitoring

Bubbling Paint Visible?

Tank	Y/N
A	NM
B	NM
C	NM

Rust Visible?

Tank	Y/N
A	NM
B	NM
C	NM

ABBREVIATIONS

ppm = parts per million
CFM = cubic feet per minute
ft/min = feet per minute
PID = photoionization detector
N/A = Not Applicable
VOC = volatile organic compound
in. H2O = inches of water column
NM = Not Measured

COMMENTS

50 Tufts Street Sub-Slab Depressurization System
Monthly Monitoring Form

SSDS Indoor Monitoring Points and Extraction Points
12/22/2010

Monitoring Point	Pressure (in. H_2O)	VOC (ppm)	Comments
EP-W1	-2.15	NM	
EP-W2	-1.71	NM	
EP-W3	-1.15	NM	
EP-W4	-0.81	NM	
EP-W5	-0.58	NM	
EP-W6	-0.62	NM	
EP-W7	-0.56	NM	
EP-W8	-0.6	NM	
EP-C1	-3.26	NM	
EP-C2	NM	NM	Covered
EP-C3	-2.2	NM	
EP-C4	-2.0	NM	
EP-C5	-1.87	NM	
EP-C6	-1.7	NM	
EP-C7	-1.49	NM	
EP-C8	-1.58	NM	
EP-C9	-1.63	NM	
EP-E1	-0.31	NM	
EP-E2	-0.27	NM	
EP-E3	-0.16	NM	
EP-E4	-0.11	NM	
EP-E5	-0.11	NM	
SS3	-0.9	NM	
SS4	-0.29	NM	
SS20	NM	NM	Covered
SS21	-0.1	NM	
SS22	-0.9	NM	
SS23	-0.5	NM	
SS24	-0.4	NM	
SS25	-0.7	NM	
SS26	-0.5	NM	
SS27	-0.5	NM	

50 Tufts Street Sub-Slab Depressurization System
Monthly Monitoring Form

SVE Outdoor Monitoring Points and Extraction Points
12/22/2010

Monitoring Point	Pressure (in. H_2O)	VOC (ppm)	Comments
SVE-1	-2.54	NM	
SVE-2	-2.52	NM	
SVE-3	-2.54	NM	
SVE-4	-2.46	NM	
SVE-5	-2.56	NM	
SVE-6	-2.56	NM	
SVE-7	-2.55	NM	
SVT-MW201D	NM	NM	
SVT-MW201S	NM	NM	
SVT-MW202D	NM	NM	
SVT-MW202S	NM	NM	
SVT-MW203	NM	NM	
SVT-1D	NM	NM	
SVT-2D	-0.39	NM	
SVT-3D	NM	NM	Not found
SVT-3S	-0.02	NM	
SVT-4D	NM	NM	
SVT-5D	NM	NM	
SVT-5S	NM	NM	
SVT-6D	-0.61	NM	
SVT-7D	NM	NM	
SVT-8D	NM	NM	Destroyed
SVT-8S	0.49	NM	
SVT-9D	-0.09	NM	
SVT-9S	-0.01	NM	
SVT-10D	NM	NM	
SVT-11S	NM	NM	
SVT-12D	NM	NM	
SVT-12S	NM	NM	
SVT-14S	NM	NM	
SVT-15D	NM	NM	
SVT-16D	NM	NM	
SVT-16S	-0.020	NM	
SVT-17D	-0.02	NM	
SVT-17S	-0.060	NM	
SVT-18D	NM	NM	
SVT-19D	-0.010	NM	
SVT-20D	0	NM	
SVT-20S	0	NM	
SVT-21D	NM	NM	
SVT-22D	NM	NM	
SVT-22S	NM	NM	
SVT-23D	NM	NM	
SVT-24D	NM	NM	
SVT-25D	NM	NM	
SVT-25S	NM	NM	
SVT-26D	NM	NM	
SVT-27D	NM	NM	

50 Tufts Street Sub-Slab Depressurization System
Monthly Monitoring Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s):	L. Welch	**Monitoring Start Time:**	8:10
	N. Slagowski	**Monitoring End Time:**	15:35
Date:	12/22/10		
Weather:	Cloudy, snow/wind later in day		**MEASUREMENTS AFTER FLOW ADJUSTMENTS**

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Calibrated To:	Successful Calibration?
PID (ppm)	Not used	N/A	N/A	N/A
Manometer (in. H_2O)	Dwyer	Mark III-475-0 Series	N/A	Zeroed before each reading
Anemomaster (CFM)	Kanomax	A034	N/A	N/A

FIELD MEASUREMENTS & OBSERVATIONS

System Status/Configuration

Fenced Enclosure Secure?	Y
Blower On?	Y
Condensate Accumulated?	N
Condensate Drained?	N/A
Hour Meter Reading?	NM
Lead Carbon Unit?	B
Secondary Carbon Unit?	C
Polish Carbon Unit?	A

Pressure/VOC Measurements

Monitoring Point	Pressure (in. H_2O)	VOC (ppm)	Velocity (ft/min)	Flow (CFM)
West Header	-0.98	NM	930	78
Center Header	-1	NM	425	43
East Header	-0.4	NM	495	30
North Header	-0.97	NM	140	43
South Header	-1.02	NM	130	32
Combined System	-1.31	NM	NM	178
Blower Effluent	NM	NM	NM	NM
Lead Carbon Effluent	NM	NM	NM	NM
Secondary Carbon	NM	NM	NM	NM
System Effluent	NM	NM	NM	NM
Ambient Air	0	NM	NM	NM
Blower Filter Inlet	NM	N/A	N/A	N/A
Blower Filter Outlet	NM	N/A	N/A	N/A

System Flow Rate Data

Velocity (ft/min)	System Flowrate (CFM):
1630	~165 (flow meter) ~140 (velocity meter)

Tank Exterior Monitoring

Bubbling Paint Visible?

Tank	Y/N
A	NM
B	NM
C	NM

Rust Visible?

Tank	Y/N
A	NM
B	NM
C	NM

ABBREVIATIONS

ppm = parts per million
CFM = cubic feet per minute
ft/min = feet per minute
PID = photoionization detector
N/A = Not Applicable
VOC = volatile organic compound
in. H2O = inches of water column
NM = Not Measured

COMMENTS

50 Tufts Street Sub-Slab Depressurization System
Monthly Monitoring Form

SSDS Indoor Monitoring Points and Extraction Points
12/22/2010

Monitoring Point	Pressure (in. H_2O)	VOC (ppm)	Comments
EP-W1	-0.89	NM	
EP-W2	-0.66	NM	
EP-W3	-0.45	NM	
EP-W4	-0.33	NM	
EP-W5	-0.24	NM	
EP-W6	-0.26	NM	
EP-W7	-0.24	NM	
EP-W8	-0.26	NM	
EP-C1	-0.92	NM	
EP-C2	NM	NM	Covered
EP-C3	-0.85	NM	
EP-C4	-0.82	NM	
EP-C5	-0.79	NM	
EP-C6	-0.74	NM	
EP-C7	-0.65	NM	
EP-C8	-0.69	NM	
EP-C9	-0.71	NM	
EP-E1	-0.25	NM	
EP-E2	-0.19	NM	
EP-E3	-0.12	NM	
EP-E4	-0.06	NM	
EP-E5	-0.08	NM	
SS3	-0.03	NM	
SS4	-0.12	NM	
SS20	NM	NM	Covered
SS21	-0.009	NM	
SS22	-0.03	NM	
SS23	-0.02	NM	
SS24	-0.11	NM	
SS25	-0.11	NM	
SS26	-0.02	NM	
SS27	-0.02	NM	

50 Tufts Street Sub-Slab Depressurization System
Monthly Monitoring Form

SVE Outdoor Monitoring Points and Extraction Points
12/22/2010

Monitoring Point	Pressure (in. H_2O)	VOC (ppm)	Comments
SVE-1	-0.99	NM	
SVE-2	-0.99	NM	
SVE-3	-0.99	NM	
SVE-4	-1.00	NM	
SVE-5	-1.01	NM	
SVE-6	-1.02	NM	
SVE-7	-1.00	NM	
SVT-MW201D	-0.01	NM	
SVT-MW201S	-0.02	NM	
SVT-MW202D	-0.02	NM	
SVT-MW202S	-0.01	NM	
SVT-MW203	NM	NM	
SVT-1D	NM	NM	Could not locate
SVT-2D	-0.16	NM	
SVT-3D	NM	NM	Could not locate
SVT-3S	-0.01	NM	
SVT-4D	-0.05	NM	
SVT-5D	NM	NM	Destroyed by snow plow
SVT-5S	NM	NM	Destroyed by snow plow
SVT-6D	-0.26	NM	
SVT-7D	NM	NM	Under vehicle
SVT-8D	0.60	NM	
SVT-8S	NM	NM	Destroyed by snow plow
SVT-9D	-0.05	NM	
SVT-9S	0.00	NM	Standing water in road box
SVT-10D	NM	NM	Presumed buried under railroad debris
SVT-11S	0.000	NM	
SVT-12D	NM	NM	Only one point in road box for SVT-12
SVT-12S	-0.20	NM	
SVT-14S	0.000	NM	
SVT-15D	0.000	NM	
SVT-16D	0.000	NM	
SVT-16S	0.000	NM	
SVT-17D	0.33	NM	
SVT-17S	0.000	NM	
SVT-18D	NM	NM	
SVT-19D	-0.004	NM	
SVT-20D	0.000	NM	
SVT-20S	0.000	NM	
SVT-21D	NM	NM	
SVT-22D	-0.05	NM	
SVT-22S	0.00	NM	Standing water in road box
SVT-23D	NM	NM	
SVT-24D	NM	NM	
SVT-25D	NM	NM	
SVT-25S	NM	NM	
SVT-26D	NM	NM	
SVT-27D	NM	NM	

50 Tufts Street Sub-Slab Depressurization System
Monthly Monitoring Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s):	N. Slagowski	**Monitoring Start Time:**	8:20
		Monitoring End Time:	12:00
Date:	01/05/11		
Weather:	Sunny, 20° - 30°	MEASUREMENTS AFTER FLOW ADJUSTMENTS	

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Calibrated To:	Successful Calibration?
PID (ppm)	PhoCheck	1000+	100 ppm Isobutylene	Yes, read 100 ppm
Manometer (in. H_2O)	Dwyer	Mark III-475-0 Series	N/A	Zeroed before each reading
Anemomaster (CFM)	Kanomax	A034	N/A	N/A

FIELD MEASUREMENTS & OBSERVATIONS

System Status/Configuration

Fenced Enclosure Secure?	Y
Blower On?	Y
Condensate Accumulated?	N
Condensate Drained?	N/A
Hour Meter Reading?	32241
Lead Carbon Unit?	B
Secondary Carbon Unit?	C
Polish Carbon Unit?	A

Pressure/VOC Measurements

Monitoring Point	Pressure (in. H_2O)	VOC (ppm)	Velocity (ft/min)	Flow (CFM)
West Header	-0.77	4.8	690	72
Center Header	-0.77	10.3	360	46
East Header	-0.29	3.3	380	50
North Header	-0.79	47	140	40
South Header	-0.8	7.9	200	41
Combined System	-1.03	8	1370	165
Blower Effluent	52	3.6	NM	NM
Lead Carbon Effluent	44.4	2.9	NM	NM
Secondary Carbon	248	0	NM	NM
System Effluent	0.37	0	NM	NM
Ambient Air	0	0	NM	NM
Blower Filter Inlet	-4	N/A	N/A	N/A
Blower Filter Outlet	-16	N/A	N/A	N/A

System Flow Rate Data

Velocity (ft/min)	System Flowrate (CFM):
920	165

Tank Exterior Monitoring

Bubbling Paint Visible?

Tank	Y/N
A	Y
B	Y
C	Y

Rust Visible?

Tank	Y/N
A	Y
B	Y
C	Y

ABBREVIATIONS

ppm = parts per million
CFM = cubic feet per minute
ft/min = feet per minute
PID = photoionization detector
N/A = Not Applicable
VOC = volatile organic compound
in. H2O = inches of water column
NM = Not Measured

COMMENTS

50 Tufts Street Sub-Slab Depressurization System
Monthly Monitoring Form

SSDS Indoor Monitoring Points and Extraction Points
1/5/2011

Note: 0.7 - 1.0 was background

Monitoring Point	Pressure (in. H_2O)	VOC (ppm)	Comments
EP-W1	-0.65	26.7	
EP-W2	-0.48	8.5	
EP-W3	-0.33	6.8	
EP-W4	-0.24	0.9	
EP-W5	-0.15	0.8	
EP-W6	-0.19	0.9	
EP-W7	-0.16	0.9	
EP-W8	-0.24	1.4	
EP-C1	-0.68	12	
EP-C2	NM	NM	Covered
EP-C3	-0.65	2.0	
EP-C4	-0.65	185	
EP-C5	-0.65	13.1	
EP-C6	-0.59	0.1	
EP-C7	-0.5	1.4	
EP-C8	-0.54	0.9	
EP-C9	-0.55	2.2	
EP-E1	-0.18	30.2	
EP-E2	-0.14	2.6	
EP-E3	-0.08	0	
EP-E4	-0.04	0.9	
EP-E5	-0.024	0.1	
SS3	-0.024	5.0	
SS4	-0.092	2.9	
SS20	NM	NM	Covered
SS21	-0.004	45.3	
SS22	-0.044	120	
SS23	-0.024	8.5	
SS24	-0.09	0.1	
SS25	-0.11	20	
SS26	-0.03	0	
SS27	-0.02	9.0	

50 Tufts Street Sub-Slab Depressurization System
Monthly Monitoring Form

SVE Outdoor Monitoring Points and Extraction Points
1/5/2011

Monitoring Point	Pressure (in. H_2O)	VOC (ppm)	Comments
SVE-1	-0.75	2.0	
SVE-2	-0.73	2.4	
SVE-3	-0.7	12.2	
SVE-4	NM	NM	Frozen shut, lid looks a little bowed in
SVE-5	-0.75	338	
SVE-6	-0.8	4.6	
SVE-7	-0.79	18.7	
SVT-MW201D	-0.02	1.8	
SVT-MW201S	-0.01	0.5	
SVT-MW202D	-0.03	0.3	
SVT-MW202S	0	0.3	
SVT-MW203	NM	NM	
SVT-1D	Not found	NM	Could not locate
SVT-2D	-0.14	0	
SVT-3D	Not found	NM	
SVT-3S	Not found	NM	Under snow plow pile
SVT-4D	-0.04	0.3	
SVT-5D	NM	NM	Destroyed by snow plow
SVT-5S	NM	NM	Destroyed by snow plow
SVT-6D	-0.17	2.4	
SVT-7D	NM	NM	Under vehicle
SVT-8D	-0.25	3.7	
SVT-8S	NM	NM	Destroyed by snow plow
SVT-9D	-0.02	0	
SVT-9S	NM	NM	Full of ice
SVT-10D	NM	NM	Presumed buried under railroad debris
SVT-11S	NM	NM	Between building and RR tracks
SVT-12D	NM	NM	Between building and RR tracks
SVT-12S	NM	NM	Between building and RR tracks
SVT-14S	NM	NM	Between building and RR tracks
SVT-15D	NM	NM	Between building and RR tracks
SVT-16D	-0.14	5.3	
SVT-16S	-0.020	3.0	
SVT-17D	0	30.2	
SVT-17S	0	2.7	
SVT-18D	NM	NM	Under snow plow pile
SVT-19D	-0.004	63.4	
SVT-20D	0	17	
SVT-20S	0	6.8	
SVT-21D	NM	NM	Under snow plow pile
SVT-22D	-0.01	114	
SVT-22S	-0.01	2.4	Standing water in road box
SVT-23D	30	0.5	
SVT-24D	0.3	78.7	
SVT-25D	NM	NM	In grass south of parking lot
SVT-25S	NM	NM	In grass south of parking lot
SVT-26D	NM	NM	In grass south of parking lot
SVT-27D	NM	NM	In grass south of parking lot

50 Tufts Street Sub-Slab Depressurization System
Monthly Monitoring Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s):	N. Slagowski	**Monitoring Start Time:**	8:30
		Monitoring End Time:	8:55
Date:	01/27/11		
Weather:	Sunny, 20° - 30°		

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Calibrated To:	Successful Calibration?
PID (ppm)	PhoCheck	1000+	100 ppm Isobutylene	N/A
Manometer (in. H_2O)	Dwyer	Mark III-475-0 Series	N/A	Zeroed before each reading
Anemomaster (CFM)	Kanomax	A034	N/A	N/A

FIELD MEASUREMENTS & OBSERVATIONS

System Status/Configuration

Fenced Enclosure Secure?	Y
Blower On?	Y
Condensate Accumulated?	N
Condensate Drained?	NA
Hour Meter Reading?	Not read
Lead Carbon Unit?	B
Secondary Carbon Unit?	C
Polish Carbon Unit?	A

Pressure/VOC Measurements

Monitoring Point	Pressure (in. H_2O)	VOC (ppm)	Velocity (ft/min)	Flow (CFM)
West Header	-0.9	NM	380	NM
Center Header	-0.88	NM	180	NM
East Header	-0.29	NM	350	NM
North Header	-0.91	NM	210	NM
South Header	-0.89	NM	140	NM
Combined System	-1.05	NM	NM	NM
Blower Effluent	58	NM	NM	NM
Lead Carbon Effluent	NM	NM	NM	NM
Secondary Carbon	NM	NM	NM	NM
System Effluent	NM	NM	NM	NM
Ambient Air	0	NM	0	NM
Blower Filter Inlet	-4	N/A	N/A	N/A
Blower Filter Outlet	-15	N/A	N/A	N/A

System Flow Rate Data

Velocity (ft/min)	System Flowrate (CFM):
870	NM

Tank Exterior Monitoring

Bubbling Paint Visible?

Tank	Y/N
A	Y
B	Y
C	Y

Rust Visible?

Tank	Y/N
A	Y
B	Y
C	Y

ABBREVIATIONS

ppm = parts per million
CFM = cubic feet per minute
ft/min = feet per minute
PID = photoionization detector
N/A = Not Applicable
VOC = volatile organic compound
In. H2O = inches of water column
NM = Not Measured

COMMENTS

On site to conduct pressure monitoring. Indoor points and parking lot locations all inaccessible because of unplowed snow. Monitoring conducted at headers only. Recirculation valve has moved - had to re-set.

50 Tufts Street Sub-Slab Depressurization System
Monthly Monitoring Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s):	N. Slagowski	**Monitoring Start Time:**	13:45
		Monitoring End Time:	15:55
Date:	02/28/11		
Weather:	Light rain, ~30°		

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Calibrated To:	Successful Calibration?
PID (ppm)	PhoCheck	1000+	99.1 ppm	Yes
Manometer (in. H_2O)	Dwyer	Mark III-475-0 Series	N/A	Zeroed before each reading
Anemomaster (CFM)	Kanomax	A034	N/A	N/A

FIELD MEASUREMENTS & OBSERVATIONS

System Status/Configuration	
Fenced Enclosure Secure?	Y
Blower On?	Y
Condensate Accumulated?	Yes
Condensate Drained?	Yes, gallons
Hour Meter Reading?	33542.4
Lead Carbon Unit?	B
Secondary Carbon Unit?	C
Polish Carbon Unit?	A

Pressure/VOC Measurements

Monitoring Point	Pressure (in. H_2O) before maintenance	VOC (ppm)
West Header	-0.11	NM
Center Header	-0.11	NM
East Header	-0.05	NM
North Header	-0.1	NM
South Header	-0.12	NM
Combined System Influent	-0.12	NM
Blower Effluent	61.2	NM
Lead Carbon Effluent	64	NM
Secondary Carbon Effluent	10.5	NM
System Effluent	1.1	NM
Ambient Air	0	NM
Blower Filter Inlet	1	N/A
Blower Filter Outlet	15	N/A

System Flow Rate Data

Velocity (ft/min)	System Flowrate (CFM):
NM	50

Tank Exterior Monitoring

Bubbling Paint Visible?

Tank	Y/N
A	NM
B	NM
C	NM

Rust Visible?

Tank	Y/N
A	NM
B	NM
C	NM

ABBREVIATIONS

ppm = parts per million
CFM = cubic feet per minute
ft/min = feet per minute
PID = photoionization detector
N/A = Not Applicable
VOC = volatile organic compound
in. H2O = inches of water column
NM = Not Measured

COMMENTS

Found gate smashed and fence post driven into garage door. Obvious car accident - car parts and fluids on ground, and tire tracks in snow. Went to get new lock and cable to secure gate. Am having pressure problems, and pipe keeps blowing off system. There is a lot of water in condensate drain, and it has never been seen before. Need to come back with pump to see if water is in system. Water in filter, so also need to come back with new filter, and tried to dry as much as possible in the meantime. Left system off to avoid blowing water through blower.

50 Tufts Street Sub-Slab Depressurization System
Monthly Monitoring Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s):	N. Slagowski	**Monitoring Start Time:**	16:15
		Monitoring End Time:	17:00
Date:	03/02/11		
Weather:	Sunny, Windy, ~30°		

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Calibrated To:	Successful Calibration?
PID (ppm)	PhoCheck	1000+	100 ppm Isobutylene	Yes, read 97 ppm after calibration
Manometer (in. H_2O)	Dwyer	Mark III-475-0 Series	N/A	Zeroed before each reading
Anemomaster (CFM)	Kanomax	A034	N/A	N/A

FIELD MEASUREMENTS & OBSERVATIONS

System Status/Configuration

Fenced Enclosure Secure?	Y
Blower On?	Y
Condensate Accumulated?	N
Condensate Drained?	N/A
Hour Meter Reading?	33544.7
Lead Carbon Unit?	B
Secondary Carbon Unit?	A
Polish Carbon Unit?	N/A

Pressure/VOC Measurements

Monitoring Point	Pressure (in. H_2O)	VOC (ppm)	Flow (CFM)
West Header	-1.06	3.9	80
Center Header	-1.06	5.2	110
East Header	-1.47	4.6	45
North Header	-1.18	35.2	91
South Header	-1.13	10.1	110
Combined System Influent	-1.45	4.6	NM
Blower Effluent	52.6	nm	NM
Lead Carbon Effluent	41.3	13.7	NM
Secondary Carbon Effluent	0.36	0.2	NM
System Effluent	Same as secondary - Tank C offline		
Ambient Air	0	0	0
Blower Filter Inlet	-6	N/A	N/A
Blower Filter Outlet	bad gauge	N/A	N/A

System Flow Rate Data

Velocity (ft/min)	System Flowrate (CFM):
NM	178

Tank Exterior Monitoring

Bubbling Paint Visible?

Tank	Y/N
A	Y
B	Y
C	Y

Rust Visible?

Tank	Y/N
A	Y
B	Y
C	Y

ABBREVIATIONS

ppm = parts per million
CFM = cubic feet per minute
ft/min = feet per minute
PID = photoionization detector
N/A = Not Applicable
VOC = volatile organic compound
in. H2O = inches of water column
NM = Not Measured

COMMENTS

Need new pressure gauges at blower effluent and blower filter outlet. Changed filter. Found Tank C to be the problem - air cannot blow through, so left that tank offline.

50 Tufts Street Sub-Slab Depressurization System
Monthly Monitoring Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s):	N. Slagowski	**Monitoring Start Time:**	7:50
		Monitoring End Time:	8:25
Date:	03/18/11		
Weather:	Sunny, Windy, ~50°		

MEASUREMENTS BEFORE FLOW ADJUSTMENTS

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Calibrated To:	Successful Calibration?
PID (ppm)	PhoCheck	1000+	52.5 ppm	No, readings ~ half?
Manometer (in. H_2O)	Dwyer	Mark III-475-0 Series	N/A	Zeroed before each reading
Anemomaster (CFM)	Kanomax	A034	N/A	N/A

FIELD MEASUREMENTS & OBSERVATIONS

System Status/Configuration

Fenced Enclosure Secure?	Y
Blower On?	Y
Condensate Accumulated?	N
Condensate Drained?	N/A
Hour Meter Reading?	33919.3
Lead Carbon Unit?	B
Secondary Carbon Unit?	A
Polish Carbon Unit?	N/A

Pressure/VOC Measurements

Monitoring Point	Pressure (in. H_2O)	VOC (ppm)
West Header	-1.11	1.3 *
Center Header	-1.1	1.5 *
East Header	-0.45	1.8 *
North Header	-1.13	15.4 *
South Header	-1.12	21 *
Combined System Influent	-1.52	2.9 *
Blower Effluent	43.8	3.1 *
Lead Carbon Effluent	33.9	5.8 *
Secondary Carbon Effluent	0.36	0
System Effluent	Same as secondary - Tank C offline	
Ambient Air	0	0
Blower Filter Inlet	-7.0	N/A
Blower Filter Outlet	bad gauge	N/A

System Flow Rate Data

Velocity (ft/min)	System Flowrate (CFM):
NM	220

Tank Exterior Monitoring

Bubbling Paint Visible?

Tank	Y/N
A	Y
B	Y
C	Y

Rust Visible?

Tank	Y/N
A	Y
B	Y
C	Y

ABBREVIATIONS

ppm = parts per million
CFM = cubic feet per minute
ft/min = feet per minute
PID = photoionization detector
N/A = Not Applicable
VOC = volatile organic compound
in. H2O = inches of water column
NM = Not Measured

COMMENTS

Changed gauges on blower filter outlet and blower effluent. Conducted carbon changeout. Tank C is damaged inside and was not refilled.

* Note = PID is only calibrating to 1/2 value, so these readings are approximately just over half of VOC value. See 03/18/11 (after changeout) Field Monitoring Form for comparison of 580B and Phocheck 1000+.

50 Tufts Street Sub-Slab Depressurization System
Monthly Monitoring Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s): N. Slagowski

Monitoring Start Time: 8:20

Monitoring End Time: 12:00

Date: 03/18/11

Weather: Sunny, Windy, ~50°

MEASUREMENTS AFTER FLOW ADJUSTMENTS

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Calibrated To:	Successful Calibration?
PID (ppm)	PhoCheck * Thermo **	1000+ * 580B **	52.5 ppm * 97 ppm **	No, readings ~ half? * Yes **
Manometer (in. H_2O)	Dwyer	Mark III-475-0 Series	N/A	Zeroed before each reading
Anemomaster (CFM)	Kanomax	A034	N/A	N/A

FIELD MEASUREMENTS & OBSERVATIONS

System Status/Configuration

Fenced Enclosure Secure?	Y
Blower On?	Y
Condensate Accumulated?	N
Condensate Drained?	N/A
Hour Meter Reading?	33919.3
Lead Carbon Unit?	A
Secondary Carbon Unit?	B
Polish Carbon Unit?	N/A

Pressure/VOC Measurements

Monitoring Point	Pressure (in. H_2O)	VOC (ppm) with 580B**	VOC (ppm) with 1000+*	Flow (CFM)
West Header	-1.22	3.7	2.2	90
Center Header	-1.26	2.5	1.9	60
East Header	-0.48	4.8	2.7	60
North Header	-1.29	17.9	20	45
South Header	-1.35	13.9	20.8	60
Combined System	-1.71	5.4	3.1	2.9
Blower Effluent	50	4.2	3.3	NM
Lead Carbon Effluent	5.3	(note)	0	NM
Secondary Carbon	3.5	(note)	0	NM
System Effluent	Same as secondary - Tank C offline			
Ambient Air	0	0	0	0
Blower Filter Inlet	-7	N/A	N/A	N/A
Blower Filter Outlet	-8	N/A	N/A	N/A

System Flow Rate Data

Velocity (ft/min)	System Flowrate (CFM):
NM	240

Tank Exterior Monitoring

Bubbling Paint Visible?

Tank	Y/N
A	Y
B	Y
C	Y

Rust Visible?

Tank	Y/N
A	Y
B	Y
C	Y

ABBREVIATIONS

ppm = parts per million
CFM = cubic feet per minute
ft/min = feet per minute
PID = photoionization detector
N/A = Not Applicable
VOC = volatile organic compound
in. H2O = inches of water column
NM = Not Measured

COMMENTS

Post-carbon changeout readings. Conducted comparison of 580B and Phocheck 1000+. Tank C is damaged inside and was not refilled.

* & ** Notes = Thermo 580B will calibrate, but cannot run unless plugged into outlet. Could only measure VOCs near system where there is an outlet - not at tanks.

50 Tufts Street Sub-Slab Depressurization System
Monthly Monitoring Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s):	N. Slagowski	**Monitoring Start Time:**	10:00
		Monitoring End Time:	10:35
Date:	04/05/11		
Weather:	Overcast, Light rain, ~50°		

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Calibrated To:	Successful Calibration?
PID (ppm)	Thermo Env. Instruments, Inc.	580B	99.6 ppm	Yes
Manometer (in. H_2O)	Dwyer	Mark III-475-0 Series	N/A	Zeroed before each reading
Anemomaster (CFM)	Kanomax	A034	N/A	N/A

FIELD MEASUREMENTS & OBSERVATIONS

System Status/Configuration

Fenced Enclosure Secure?	Y
Blower On?	Y
Condensate Accumulated?	N
Condensate Drained?	N/A
Hour Meter Reading?	34351.3
Lead Carbon Unit?	A
Secondary Carbon Unit?	B
Polish Carbon Unit?	N/A

Pressure/VOC Measurements

Monitoring Point	Pressure (in. H_2O)	VOC (ppm)
West Header	-1.11	6.6
Center Header	-1.12	7.1
East Header	-0.42	5.8
North Header	-1.06	52.6
South Header	-1.15	16.4
Combined System Influent	-1.51	9.1
Blower Effluent	48	8.1
Lead Carbon Effluent	5.9	0
Secondary Carbon Effluent	0.5	1.9 *
System Effluent	Same as secondary - Tank C offline	
Ambient Air	0	0
Blower Filter Inlet	-7	N/A
Blower Filter Outlet	-8	N/A

System Flow Rate Data

Velocity (ft/min)	System Flowrate (CFM):
NM	195

Tank Exterior Monitoring

Bubbling Paint Visible?

Tank	Y/N
A	Y
B	Y
C	Y

Rust Visible?

Tank	Y/N
A	Y
B	Y
C	Y

ABBREVIATIONS

ppm = parts per million
CFM = cubic feet per minute
ft/min = feet per minute
PID = photoionization detector
N/A = Not Applicable
VOC = volatile organic compound
in. H2O = inches of water column
NM = Not Measured

COMMENTS

Tank C still broken and off-line. Readjusted recirculation value, had shifted slightly from marked location.
Rust and paint bubbles very small.

* Note = Reading possibly due to great amount of moisture in line.

50 Tufts Street Sub-Slab Depressurization System
Monthly Monitoring Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s):	N. Slagowski	**Monitoring Start Time:**	12:00
		Monitoring End Time:	12:35
Date:	05/02/11		
Weather:	Sunny, ~60°		

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Calibrated To:	Successful Calibration?
PID (ppm)	Thermo Env. Instruments, Inc.	580B	99.8	Yes
Manometer (in. H_2O)	Dwyer	Mark III-475-0 Series	N/A	Zeroed before each reading
Anemomaster (CFM)	Kanomax	A034	N/A	N/A

FIELD MEASUREMENTS & OBSERVATIONS

System Status/Configuration

Fenced Enclosure Secure?	Y
Blower On?	Y
Condensate Accumulated?	N
Condensate Drained?	N/A
Hour Meter Reading?	35001.2
Lead Carbon Unit?	A
Secondary Carbon Unit?	B
Polish Carbon Unit?	N/A

Pressure/VOC Measurements

Monitoring Point	Pressure (in. H_2O)	VOC (ppm)
West Header	-1.07	7.1
Center Header	-1.1	10.8
East Header	-0.42	5.3
North Header	-1.12	54.4
South Header	-1.13	25.4
Combined System Influent	-1.49	11
Blower Effluent	47	8.6
Lead Carbon Effluent	5.6	0.8
Secondary Carbon Effluent	0.3	1.1 *
System Effluent	Effluent is secondary tank - Tank C offline	
Ambient Air	0	0
Blower Filter Inlet	-6	N/A
Blower Filter Outlet	-8	N/A

System Flow Rate Data

Velocity (ft/min)	System Flowrate (CFM):
411 **	35 **

Tank Exterior Monitoring

Bubbling Paint Visible?

Tank	Y/N
A	Y
B	Y
C	Y

Rust Visible?

Tank	Y/N
A	Y
B	Y
C	Y

ABBREVIATIONS

ppm = parts per million
CFM = cubic feet per minute
ft/min = feet per minute
PID = photoionization detector
N/A = Not Applicable
VOC = volatile organic compound
in. H2O = inches of water column
NM = Not Measured

COMMENTS

Tank C still broken and off-line.
Rust and paint bubbles very small.
Matt Sepe came to pick up keys for Variable Frequency Drive (VFD) installation.

* Note = Reading possibly due to moisture in line.
** Note = Readings seem low compared to pressure, need to re-check after VFD installation.

50 Tufts Street Sub-Slab Depressurization System
Monthly Monitoring Form

SSDS Indoor Monitoring Points and Extraction Points
5/2/2011

Monitoring Point	Pressure (in. H_2O)	VOC (ppm)	Comments
EP-W1			
EP-W2			
EP-W3			
EP-W4			
EP-W5			
EP-W6			
EP-W7			
EP-W8			
EP-C1			
EP-C2			
EP-C3			
EP-C4			
EP-C5			
EP-C6			
EP-C7			
EP-C8			
EP-C9			
EP-E1			
EP-E2			
EP-E3			
EP-E4			
EP-E5			
SS3			
SS4			
SS20			
SS21			
SS22			
SS23			
SS24			
SS25			
SS26			
SS27			

50 Tufts Street Sub-Slab Depressurization System
Monthly Monitoring Form

SVE Outdoor Monitoring Points and Extraction Points
5/2/2011

Monitoring Point	Pressure (in. H_2O)	VOC (ppm)	Comments
SVE-1			
SVE-2			
SVE-3			
SVE-4			
SVE-5			
SVE-6			
SVE-7			
SVT-MW201D			
SVT-MW201S			
SVT-MW202D			
SVT-MW202S			
SVT-MW203			
SVT-1D			
SVT-2D			
SVT-3D			
SVT-3S			
SVT-4D			
SVT-5D			
SVT-5S			
SVT-6D			
SVT-7D			
SVT-8D			
SVT-8S			
SVT-9D			
SVT-9S			
SVT-10D			
SVT-11S			
SVT-12D			
SVT-12S			
SVT-14S			
SVT-15D			
SVT-16D			
SVT-16S			
SVT-17D			
SVT-17S			
SVT-18D			
SVT-19D			
SVT-20D			
SVT-20S			
SVT-21D			
SVT-22D			
SVT-22S			
SVT-23D			
SVT-24D			
SVT-25D			
SVT-25S			
SVT-26D			
SVT-27D			

50 Tufts Street Sub-Slab Depressurization System
Monthly Monitoring Form

GENERAL MONITORING INFORMATION

GEI Field Representative(s):	N. Slagowski	**Monitoring Start Time:**	11:50
		Monitoring End Time:	12:30
Date:	06/13/11		
Weather:	Overcast, ~60°		

INSTRUMENTATION INFORMATION

Instrument	Manufacturer	Model	Calibrated To:	Successful Calibration?
PID (ppm)	Thermo Env. Instruments, Inc.	580B	100.2	Yes
Manometer (in. H_2O)	Dwyer	Mark III-475-0 Series	N/A	Zeroed before each reading
Anemomaster (CFM)	Kanomax	A034	N/A	N/A

FIELD MEASUREMENTS & OBSERVATIONS

System Status/Configuration

Fenced Enclosure Secure?	Y
Blower On?	Y
Condensate Accumulated?	N
Condensate Drained?	N/A
Hour Meter Reading?	36009.0
Lead Carbon Unit?	A
Secondary Carbon Unit?	B
Polish Carbon Unit?	N/A

Pressure/VOC Measurements

Monitoring Point	Pressure (in. H_2O)	VOC (ppm)
West Header	-1.23	11.2
Center Header	-1.22	13.2
East Header	-0.48	7.9
North Header	-1.32	107
South Header	-1.33	26.3
Combined System Influent	-1.75	17.3
Blower Effluent	44	6.3
Lead Carbon Effluent	6.14	0.2
Secondary Carbon Effluent	0.41	0.6
System Effluent	Effluent is secondary tank - Tank C offline	
Ambient Air	0	0.2-0.6
Blower Filter Inlet	-7	
Blower Filter Outlet	-8	

System Flow Rate Data

Velocity (ft/min)	System Flowrate (CFM):
2900	248

Tank Exterior Monitoring

Bubbling Paint Visible?

Tank	Y/N
A	Y
B	Y
C	Y

Rust Visible?

Tank	Y/N
A	Y
B	Y
C	Y

ABBREVIATIONS

ppm = parts per million
CFM = cubic feet per minute
ft/min = feet per minute
PID = photoionization detector
N/A = Not Applicable
VOC = volatile organic compound
in. H2O = inches of water column
NM = Not Measured

COMMENTS

Tank C still broken and off-line.
Rust and paint bubbles very small.
Found exhaust pipe blown open. Shut off system for about 5 minutes to re-connect. Started again with no problems.

GEI Consultants

Geotechnical
Environmental
Water Resources
Ecological

Appendix F

Disposal Documentation

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: MAC300011277

2. Page 1 of 1

3. Emergency Response Phone: 800-698-1865

4. Manifest Tracking Number: 008335665 JJK

GENERATOR

5. Generator's Name and Mailing Address
Unifirst Corporation
68 Jonspin Road
Wilmington MA 01887

Generator's Phone: 978 658-8888

Generator's Site Address (if different than mailing address)
Unifirst Corporation
50 Tufts Street
Somerville MA 02143

6. Transporter 1 Company Name: New England Disposal Technologies, Inc.
U.S. EPA ID Number: MAC300008059

7. Transporter 2 Company Name: New England Disposal Technologies, Inc.
U.S. EPA ID Number: MAC300008059

8. Designated Facility Name and Site Address
Rineco
1007 Vulcan Road - Haskell
Benton AR 72015

Facility's Phone: 501 778-6325

U.S. EPA ID Number: ARD981057870

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. RQ NA3077, Hazardous waste, solid, n.o.s. (carbon, perchloroethylene) 9, PGIII (RQ D039)	17	DM	5100	P	D039	U210	
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1)0709-15077 ERG#171

192468

[illegible]

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: William J. Graham for UniFirst Corporation

Signature: For UniFirst Corporation

Month 3 Day 15 Year 11

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S.
Port of entry/exit:
Transporter signature (for exports only):
Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Shawn M. Ford
Signature:
Month 03 Day 18 Year 11

Transporter 2 Printed/Typed Name: Kevin Corr
Signature:
Month 03 Day 21 Year 11

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number:
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H061			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Carrie LeBeau
Signature: Carrie LeBeau
Month 3 Day 23 Year 11

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

GEI Consultants

Geotechnical
Environmental
Water Resources
Ecological

Appendix G

Substantial Hazard Evaluation

ARCADIS
Infrastructure, environment, buildings

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UniFirst Corporation

Substantial Hazard Evaluation

50 Tufts Street, Somerville, MA

RTN 3-23246

August 2011

ARCADIS

Substantial Hazard Evaluation

50 Tufts Street
Somerville, Massachusetts

Brian Magee

Brian Magee, PhD
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Our Ref.:
MA000977.0001

Date:
August 2011

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1. INTRODUCTION

This submittal presents the results of a Substantial Hazard Evaluation (SHE) for the 50 Tufts Street Site in Somerville, Massachusetts. The 50 Tufts Street Site is identified by Massachusetts Department of Environmental Protection (MassDEP) Release Tracking Number (RTN) 3-23246[1]. This SHE was prepared to support the Phase IV Final Inspection Report, Remedial Monitoring Report No. 15, and Phase V Remedy Operation Status Report (ROS Report) prepared by GEI Consultants, Inc. (GEI) and is not intended to be a stand-alone document. The Site is depicted in Figure 1-2 of the ROS Report and described in Section 1 of the ROS Statement.

Consistent with 310 CMR 40.0956, the SHE evaluates possible exposures to human and environmental receptors considering current use(s) and activities at the Site. This SHE summarizes, where applicable, information on site characterization and Massachusetts Contingency Plan (MCP) compliance; however, additional information is contained in the ROS and prior Risk Characterization submittals (GEI 2008, GEI 2009a, GEI 2009b, GEI 2011). In addition, certain Figures referenced herein are contained in the ROS to which this SHE is appended.

Four comprehensive Method 3 Risk Characterizations have previously been prepared for the Site. The purpose of each Risk Characterization was to evaluate potential current and future risk of harm to health, safety, public welfare, and the environment posed by compounds of potential concern (COPCs) associated with the Site. The first was submitted as part of the Phase II Comprehensive Site Assessment (CSA) and Phase III Remedial Action Plan (RAP) in July 2008. The second, a Supplemental Method 3 Risk Characterization, was submitted in May 2009 to respond to comments from MassDEP. In support of the Immediate Response Action Completion (IRAC) Report dated November 2009, a third Revised Supplemental Method 3 Risk Characterization was completed that incorporated data collected at the Site through September 30, 2009. A fourth Updated Revised Supplemental Risk Characterization was submitted on April 1, 2011 in response to the MassDEP Notice of Audit Findings and Notice of Noncompliance dated February 1, 2011 (NOAF/NON).

2. HUMAN HEALTH SUBSTANTIAL HAZARD EVALUATION APPROACH

The human health SHE includes four steps. In the first step, Hazard Identification, COPCs are selected for quantitative evaluation in the SHE. The second step, Dose-Response Assessment, describes the relationship between the magnitude of exposure (dose) and the potential occurrence of health effects

---

[1] For tracking and reporting purposes, MassDEP has consolidated all RTNs for this Site under one number, RTN 3-23246.

(response) for each COPC. The third step, Exposure Assessment, identifies potential current human receptors based on characteristics of the Site and quantifies the magnitude and frequency of receptors' potential exposure to COPCs. The fourth step, Risk Characterization, combines the information from the previous three steps to derive quantitative estimates of the likelihood for adverse noncarcinogenic health effects or carcinogenic effects.

Potential noncarcinogenic and carcinogenic effects were estimated for each current receptor for each potential exposure pathway identified in the Exposure Assessment. The estimated potential current risks from each exposure pathway were summed to obtain an estimate of total current risk for each receptor. Details on each step of the evaluation, as well as the results of the human health SHE, are provided in the remainder of this report.

The results of the April 2011 Risk Characterization Report indicated that, with the exception of potential indoor air exposures at 9 Tufts Street (Right Unit), 17 Tufts Street, and 19 Tufts Street, all current uses of the Site meet a condition of No Significant Risk to health, safety, public welfare, and the environment. The April 2011 Risk Characterization Report assumed an exposure period of 27 years for commercial receptors and 30 years for residential receptors, with the exception of 95 Franklin Street residential receptors (assumed an exposure duration of 5 years in anticipation of the additional exposure pathway elimination measure [EPEM] that was implemented in the interim between the April 2011 Risk Characterization Report and the ROS Report). This SHE considers an exposure period of 13 years in accordance with 310 CMR 40.0956 (2003 to the present with an additional five years). Thus, the results of the April 2011 Risk Characterization Report already have demonstrated the absence of a Substantial Hazard at all portions of the Site other than the 9 Tufts Street (Right Unit), 17 Tufts Street, 19 Tufts Street, and 95 Franklin Street properties. Therefore, current risks for 9 Tufts Street (Right Unit), 17 Tufts Street, 19 Tufts Street, and 95 Franklin Street properties will be evaluated in this SHE.

Additional indoor air samples were collected at the following properties after the February 14, 2011 cut-off date for data included in the April 2011 Risk Characterization Report and before the July 1, 2011 cut-off date for data included in this SHE: 32 Knowlton Street, 35-37 Knowlton Street, 60 Tufts Street (Unit 5), 27 Tufts Street, 17 Knowlton Street, 10 Morton Street, 18 Morton Street, 19-19A Morton Street, 117 Washington Street, and 95 Franklin Street. Based on recent non-detect results, the indoor air pathways at 32 Knowlton Street, 35-37 Knowlton Street, 60 Tufts Street (Unit 5), and 27 Tufts Street have been mitigated by EPEMs, and the indoor air pathways at those properties are incomplete. Since risks presented in the April 2011 Risk Characterization for these properties meet a condition of No Significant Risk to health, it can be concluded that a Substantial Hazard does not exist at 32 Knowlton Street, 35-37 Knowlton Street, 60 Tufts Street (Unit 5), and 27 Tufts Street.

Recent results indicate the presence of COPCs above reporting limits in indoor air at 17 Knowlton Street, 10 Morton Street, 18 Morton Street, 19-19A Morton Street, 117 Washington Street, and 95 Franklin Street.

Risks presented in this SHE for these properties will incorporate new data and assume an exposure duration of 13 years.

In summary, Sections 3, 4 and 5 of this SHE (Hazard Identification, Dose-Response Assessment, and Exposure Assessment) focus on the SHE for current residential receptors at 9 Tufts Street (Right Unit), 17 Tufts Street, 19 Tufts Street, 95 Franklin Street, 17 Knowlton Street, 10 Morton Street, 18 Morton Street, 19-19A Morton Street, and 117 Washington Street properties. Data and Risk Characterization results for other portions of the Site will not be re-presented in this SHE. Refer to GEI (2011) for detailed presentation of the April 2011 Risk Characterization methods and results.

3. HAZARD IDENTIFICATION

The Hazard Identification step includes a discussion of the data sets considered and COPCs selected for quantitative evaluation in the SHE.

Consistent with the May 2009, November 2009, and April 2011 Risk Characterization Reports prepared for the Site, potential outdoor exposures at the 9 Tufts Street (Right Unit), 17 Tufts Street, and 19 Tufts Street properties were evaluated using data collected within the “Tufts Street and MBTA Railroad Area” exposure area located within the boundaries of the Site. Likewise, potential outdoor exposures at the 95 Franklin Street, 17 Knowlton Street, 10 Morton Street, 18 Morton Street, 19-19A Morton Street, and 117 Washington Street properties were evaluated using data collected within the “Other Streets Area” exposure area located within the boundaries of the Site. The boundaries of these exposure areas are depicted on Figure RC-1. The “Tufts Street and MBTA Railroad Area” exposure area includes the east side of Tufts Street bounded by Glen Street to the north and Knowlton Street to the east. The portion of the railroad tracks owned by the Massachusetts Bay Transportation Authority (MBTA) that borders 50 Tufts Street (the Property) to the west and is bounded by Cross Street to the north and Washington Street to the south was also included in this exposure area. The “Other Streets Area” exposure area includes portions of the following streets located north and east of Tufts Street: Glen Street, Morton Street, Knowlton Street, Franklin Street, Franklin Avenue, Palmer Avenue, Hadley Court, Cobble Hill Road, New Washington Street, and Washington Street. The Michael E. Capuano Early Childhood Center (located at 150 Glen Street) and samples collected within streets adjacent to these defined properties were also included in this exposure area.

3.1 Data Sets

Soil vapor samples were collected from one location within the “Tufts Street and MBTA Railroad Area” exposure area and from 10 locations within the “Other Streets Area” exposure area during several rounds of investigation from January 2007 through April 2008. These data, collected from monitoring wells equipped with a soil vapor sampling port and valve, were used to estimate potential exposures to future construction workers in prior Risk Characterizations. As described in Section 1, this SHE evaluates only current use(s) and activities; thus, soil vapor data were not quantitatively evaluated in this SHE.

Groundwater samples have been collected from four monitoring wells within the “Tufts Street and MBTA Railroad Area” exposure area and from 19 monitoring wells within the “Other Streets Area” exposure area. Because the depth to groundwater ranges from 5 to 15 feet below ground surface (ft bgs), potential human exposure to groundwater is limited to the potential inhalation of volatile COPCs during hypothesized future construction activities. As described in Section 1, this SHE evaluates only current use(s) and activities; thus, groundwater data were not quantitatively evaluated in this SHE.

Similar to prior risk characterizations, the soil data set selected for this SHE consists of the maximum soil concentrations from accessible surface soil samples (unpaved and located 0 to 3 ft bgs) within the “Tufts Street and MBTA Railroad Area” and “Other Streets Area” exposure areas collected through March 2008 (Tables RC-1 and RC-2). Soil samples have been collected within the exposure areas subsequent to March 2008; however, a review of the soil data collected subsequent to March 2008 indicates detectable concentrations of COPCs that are consistent with or less than concentrations in soil considered in prior Risk Characterizations. Therefore, the data sets presented in the prior Risk Characterizations are conservative representations of current exposures to soil at 9 Tufts Street (Right Unit), 17 Tufts Street, 19 Tufts Street, 95 Franklin Street, 17 Knowlton Street, 10 Morton Street, 18 Morton Street, 19-19A Morton Street, and 117 Washington Street.

Outdoor air data used in this SHE were collected by GEI in 2006, 2007, and 2008 from locations within the “Tufts Street and MBTA Railroad Area” and “Other Street Area” exposure areas (Tables RC-3 and RC-4). These samples were used to estimate potential exposures to outdoor air at 9 Tufts Street (Right Unit), 17 Tufts Street, 19 Tufts Street, 95 Franklin Street, 17 Knowlton Street, 10 Morton Street, 18 Morton Street, 19-19A Morton Street, and 117 Washington Street.

As noted in Section 2, the indoor air Exposure Assessment in this SHE includes an evaluation of the following:

1) 9 Tufts Street (Right Unit), 17 Tufts Street, and 19 Tufts Street: a complete vapor intrusion exposure pathway has been identified in these homes and a condition of No Significant Risk was not achieved, as summarized in the April 2011 Risk Characterization.

2) 95 Franklin Street: a complete vapor intrusion exposure pathway has been identified in this home and the April 2011 Risk Characterization assumed an exposure duration of 5 years in anticipation of the additional EPEM that was implemented in the interim between the April 2011 Risk Characterization Report and the ROS Report.

3) 17 Knowlton Street, 10 Morton Street, 18 Morton Street, 19-19A Morton Street, and 117 Washington Street: a complete vapor intrusion exposure pathway has been identified in these homes and COPCs were identified above reporting limits in indoor air samples collected after the February 14, 2011 cut-off date for data included in the April 2011 Risk Characterization Report.

For homes with current EPEMs, the SHE data set consists of indoor air samples collected subsequent to the installation or modification of the EPEMs. Tables RC-5 through RC-13 present indoor air data specific to 9 Tufts Street (Right Unit), 17 Tufts Street, 19 Tufts Street, 95 Franklin Street, 17 Knowlton Street, 10 Morton Street, 18 Morton Street, 19-19A Morton Street, and 117 Washington Street.

Based on post-mitigation indoor air sampling, EPEMs have eliminated the vapor intrusion pathway for the following 13 properties: 91-93 Franklin Street, 95R Franklin Street, 166-168 Glen Street, 9 Knowlton Street, 13 Knowlton Street, 31-33 Knowlton Street, 32 Knowlton Street, 35-37 Knowlton Street, 11 Morton Street, 13 Morton Street, 60 Tufts Street (Units 1, 5, 10, and 16), 103 Washington Street, and 27 Tufts Street. This SHE assumes that current vapor mitigation systems within the Property and off-Property buildings will remain in-place and be monitored in accordance with a properly recorded Activity and Use Limitation (AUL) and/or as part of Phase V activities.

3.2 Selection of COPCs

The following 11 COPCs were selected for quantitative evaluation in this SHE and are consistent with the COPCs selected for the Site-wide Risk Characterizations previously prepared for the Site: vinyl chloride, trichloroethylene (TCE), 1,1,1-trichloroethane (TCA), trans-1,2-dichloroethylene, tetrachloroethylene (PCE), 1,1-dichloroethylene, cis-1,2-dichloroethylene, 1,1-dichloroethane, chloroform, chloroethane, and carbon tetrachloride.

Analytical results for certain COPCs detected in indoor and outdoor air samples were questionable, based on a review of groundwater sample results and a determination of whether the compound is a breakdown product of the chlorinated solvents detected in samples collected at 50 Tufts Street. A review indicated that detected concentrations of chloroform, chloroethane, and carbon tetrachloride in indoor air and outdoor air are not associated with the Site. As a result, these compounds were not considered COPCs in indoor air or outdoor air. The rationale for this determination is described below for each relevant compound:

- Chloroform – Chloroform was detected at low concentrations in groundwater, well below MassDEP's Method 1 GW-2 Standard (50 µg/L), which is protective of residential exposure to indoor air. Therefore, it would not contribute significantly to potential indoor air exposures. Chloroform is commonly present in environmental samples as a result of laboratory sample processing and is not a degradation product of chlorinated solvents.

- Chloroethane – Chloroethane was only detected in one monitoring well beyond 50 Tufts Street. The well (MW-116) was located approximately 400 feet downgradient from the 50 Tufts Street boundary at levels slightly above the laboratory reporting limit (2.3 and 2.4 µg/L) and therefore does not pose a risk of impacting indoor air quality.

- Carbon Tetrachloride – Carbon tetrachloride was not detected in soil or groundwater samples collected outside the boundaries of the 50 Tufts Street property. In addition, carbon tetrachloride was above the laboratory reporting limit in only one indoor air sample collected at a location outside the boundaries of 50 Tufts Street. Further, carbon tetrachloride was detected in all outdoor air samples at similar values because of its ubiquitous nature in ambient air.

4. DOSE-RESPONSE ASSESSMENT

The purpose of the Dose-Response Assessment is to identify the relationship between the magnitude of COPCs to which receptors may be exposed (dose) and the likelihood of an adverse health effect (response). Both noncarcinogenic (i.e., threshold) and carcinogenic (i.e., non-threshold) health effects were considered in this SHE. Dose-response information used in this SHE was obtained from MassDEP publications (MassDEP 2008b), including a document entitled "Revised Proposed Interim Unit Risk Revision for Tetrachloroethylene" (MassDEP 2008d). Toxicity values for chloroethane were not available from MassDEP publications. Therefore, toxicity values for chloroethane were obtained from the U.S. Environmental Protection Agency's (U.S. EPA) Integrated Risk Information System (IRIS; U.S. EPA 2008). The toxicity data used in this SHE are shown in Table RC-14.

4.1 Noncarcinogenic Dose-Response

Compounds with known or potential noncarcinogenic effects were assumed to have a dose below which no adverse effect occurs, or conversely, above which an effect may be seen. In laboratory experiments, this dose is known as the "No Observed Adverse Effect Level" (NOAEL). The lowest dose at which an adverse effect is seen is called the "Lowest Observed Adverse Effect Level" (LOAEL). By applying uncertainty factors to the NOAEL or the LOAEL, Reference Doses (RfDs) and Reference Concentrations (RfCs) are developed for chronic and, in some cases, subchronic, exposures to compounds with potential noncarcinogenic effects. Many of the noncarcinogenic dose-response values provided by MassDEP (2008b) were developed by the U.S. EPA and are reported in U.S. EPA (2008), while other values provided in MassDEP (2008b) were developed by MassDEP.

Uncertainty factors account for uncertainties associated with the dose-response data, such as the appropriateness of using an animal study to derive a human dose-response value, and the potential for especially sensitive subpopulations to exist, which may not be adequately represented by the laboratory test animals. For compounds with potential noncarcinogenic effects, the RfD or RfC provides reasonable certainty that, if the specified exposure dose is below the threshold, then no noncarcinogenic health effects are expected to occur. RfDs are expressed in terms of milligrams of compound per kilogram of body weight per day (mg/kg-day) and are used to evaluate estimated oral and dermal exposures. RfCs are expressed in terms of milligrams of compound per cubic meter of air (mg/m^3) and are used to evaluate estimated inhalation exposures in a specific exposure context (continuous exposure for a chronic period of time). Table RC-14 summarizes the toxicity values for the COPCs evaluated here by the inhalation and oral / dermal exposure routes.

4.2 Carcinogenic Dose-Response

The U.S. EPA assumes for regulatory risk assessment of carcinogenic effects that no threshold dose exists (U.S. EPA 1990, 1997). In other words, U.S. EPA assumes that a finite level of risk may be associated with any dose above zero. In March 2005, U.S. EPA issued new cancer guidelines (U.S. EPA 2005), the purpose of which is to recommend principles and procedures to guide U.S. EPA scientists in assessing the cancer risks from chemicals or other agents in the environment when deriving toxicity values. U.S. EPA uses a two-part system for characterizing the extent to which the available data support the hypothesis that an agent causes cancer in humans.

U.S. EPA's first step in evaluating a potential carcinogen is to assign a weight-of-evidence (WOE) classification. Under U.S. EPA's previous cancer guidelines released in 1986, the WOE was described by categories "Group A" through "Group E", with Group A category reserved for known human carcinogens, while Group E category was the other end of the spectrum, representing compounds/agents with evidence of non-carcinogenicity. In the U.S. EPA's more recent approach for carcinogen risk assessment (U.S. EPA 2005), all scientific information is considered in determining whether and under what conditions an agent may cause cancer in humans. Furthermore, the WOE provides a narrative approach to characterize carcinogenicity rather than distinct categories by summarizing the evidence about the likelihood of the compound being a human carcinogen. Five standard WOE descriptors are currently used as part of the narrative, including:

1. Carcinogenic to Humans

2. Likely to be Carcinogenic to Humans

3. Suggestive Evidence of Carcinogenic Potential

4. Inadequate Information to Assess Carcinogenic Potential

5. Not Likely to be Carcinogenic to Humans

As part of the updated guidance on evaluating potentially carcinogenic compounds, the U.S. EPA emphasizes the value of understanding the biological changes that the agent of interest can cause (e.g., mode of action) and how these changes might lead to the development of cancer. This information, as well as the agent's human carcinogenic potential, is to be described in a narrative prepared by U.S. EPA's scientists, summarizing the full range of available evidence and describing any conditions associated with conclusions about an agent's hazard potential, including which populations or life stages may be particularly susceptible. Because the data for many of the potentially carcinogenic compounds have not been re-evaluated since the initial derivation of the cancer slope factors under the 1986 cancer guidelines, the cancer toxicity information presented in U.S. EPA (2008) may represent cancer toxicity information derived under the 1986 guidelines, with more recent cancer evaluations conducted for a limited number of compounds under the more recent 2005 guidance.

The second step in the carcinogenicity evaluation process is the calculation of a quantitative estimate of carcinogenic potency. The U.S. EPA has developed computer models that extrapolate the observed responses at high doses used in animal studies to predict responses in humans at the low doses encountered during environmental exposures. The models developed by the U.S. EPA assume no threshold and usually consider animal (and sometimes human) data to estimate carcinogenic potency. Further, the models assume that carcinogenic dose-response is linear at low doses. U.S. EPA refers to this numerical estimate of the dose response factor (or the slope of the line plotted from dose vs. response) as the cancer slope factor (CSF) for oral exposures. For inhalation exposures, the numerical estimate is expressed as either a unit risk (UR) factor or CSF. A CSF is expressed in terms of the inverse of milligrams of agent per kilogram body weight per day [(mg/kg-day)$^{-1}$] and represents the upper-bound excess lifetime cancer risk estimate that results from a daily lifetime exposure to an agent at a dose of 1 mg/kg-day. The UR is expressed in terms of the inverse of micrograms per cubic meter [(• g/m^{3})$^{-1}$] and represents the upper-bound excess lifetime cancer risk estimated to result from continuous daily lifetime exposure to an agent at a concentration of 1 • g/m^{3} in air. Table RC-14 summarizes carcinogenic toxicity values for COPCs used in this SHE.

5. EXPOSURE ASSESSMENT

5.1 Receptors and Exposure Pathways

Consistent with the requirements of the MCP (310 CMR 40.0956), the exposure assessment considered only current residential activities and uses at 9 Tufts Street (Right Unit), 17 Tufts Street, 19 Tufts Street, 95 Franklin Street, 17 Knowlton Street, 10 Morton Street, 18 Morton Street, 19-19A Morton Street, and 117 Washington Street. The potentially complete outdoor exposure pathways for residents include incidental ingestion and dermal contact with accessible surface soil (unpaved and located 0 to 3 ft bgs) and inhalation of soil derived particulates and volatiles in ambient air. Potentially complete indoor exposure pathways for these residents include inhalation of volatiles in indoor air. Groundwater is not currently used as a potable water source. Groundwater meets none of the definitions of a Current or Potential Drinking Water Source Area and as such is not categorized as GW-1.

Two different current residential receptors were considered in this SHE: a "homebound resident" exposed to the indoor air pathway only and a "resident" exposed via both indoor and outdoor exposure pathways. A homebound resident is assumed to be exposed to the indoor air pathway 365 days per year for 24 hours per day, while the exposure duration value used to evaluate the non-homebound resident receptor considers the following indoor exposure durations for each life stage:

- Infant: 24 hours per day indoors for 365 days per year
- Young Child and Older Child: 20 hours per day indoors during summer months and 24 hours per day indoors during winter months
- Adult: 16 hours per day indoors during summer months and 24 hours per day indoors during winter months

Because GEI has not been granted recent access to the basements at 9 Tufts Street (Right Unit), 17 Tufts Street, and 19 Tufts Street to measure basement ceiling height, and because the basement ceiling height at 19-19A Morton Street has been estimated to be 8 feet, this SHE conservatively assumes that these basements have more than 7 feet of headroom and a resident spends 12 hours per day in the basement and the remaining 12 hours per day on the first floor. The basements at 95 Franklin Street, 17 Knowlton Street, 10 Morton Street, 18 Morton Street, and 117 Washington Street have been measured at less than 7 feet; thus, this SHE conservatively assumes that a resident spends 4 hours per day in the basement and the remaining 20 hours per day on the first floor. Exposure assumptions are further described in Section 5.7 of this report.

5.2 Exposure Points

It was assumed that the current receptors at 9 Tufts Street (Right Unit), 17 Tufts Street, 19 Tufts Street, 95 Franklin Street, 17 Knowlton Street, 10 Morton Street, 18 Morton Street, 19-19A Morton Street, and 117 Washington Street would be exposed to COPCs present in accessible surface soil (unpaved and located 0 to 3 ft bgs), outdoor air, and indoor air.

5.3 "Hotspot" Evaluation

The MCP generally requires evaluation of exposures, as well as Upper Concentration Limit (UCL) comparisons, in "hotspots". The MCP (310 CMR 40.0006) defines a "hotspot" as an area where concentrations are more than 100-fold higher than the surrounding areas, except where the potential for greater exposure exists. As noted in prior Risk Characterizations, although concentrations more than 10-fold higher than surrounding concentrations were identified during this evaluation, no specific point or sub-area represents a location with higher potential for exposure than elsewhere. Therefore, no "hotspots" are present.

5.4 Qualitative Evaluation of Potential Exposures

Quantitative evaluations based on current receptors with the greatest potential for exposure at 9 Tufts Street (Right Unit), 17 Tufts Street, 19 Tufts Street, 95 Franklin Street, 17 Knowlton Street, 10 Morton Street, 18 Morton Street, 19-19A Morton Street, and 117 Washington Street result in conservative estimates for receptors with less intrusive roles at the property. Specifically, landscapers, trespassers, and visitors would have lower frequencies of exposure than a resident. Using this rationale, landscapers, trespassers, and visitors were evaluated qualitatively via comparison to quantified exposures for the residential receptor. If "No Substantial Hazard" was demonstrated for the more highly exposed receptor, it was indicative of "No Substantial Hazard" to less exposed receptors.

As noted in Section 2, the results of the April 2011 Risk Characterization Report indicated that, with the exception of potential indoor air exposures at 9 Tufts Street (Right Unit), 17 Tufts Street, and 19 Tufts Street, all current uses of the Site meet a condition of No Significant Risk to health, safety, public welfare, and the environment. This SHE considers an exposure period of 13 years in accordance with 310 CMR 40.0956 (2003 to the present with an additional five years); the April 2011 Risk Characterization Report assumed a higher period of exposure for most commercial and residential receptors (27 years for a commercial worker and 30 years for a resident), with the exception of 95 Franklin Street, which was evaluated at an exposure duration of 5 years in anticipation of installation of the additional EPEM at that property that was implemented in the interim between the April 2011 Risk Characterization Report and the ROS Report. Since "No Significant Risk" was demonstrated for the more highly exposed current receptors at all properties except 9 Tufts Street (Right Unit), 17 Tufts Street, 19 Tufts Street, and 95 Franklin Street, it is indicative of "No Substantial Hazard" to less exposed receptors. Refer to GEI (2011) for detailed presentation of the April 2011 Risk Characterization methods and results.

Since the results of the April 2011 Risk Characterization Report indicated that potential exposures to soil, soil particulates in ambient air, and groundwater and volatiles derived from soil, soil gas, and/or groundwater in trench excavations at the Site posed "No Significant Risk" to utility workers at the Site, they also indicate "No Substantial Hazard" to utility workers at the Site. Refer to GEI (2011) for detailed presentation of the April 2011 Risk Characterization methods and utility worker results.

5.5 Estimation of Exposure Point Concentrations

An EPC is defined as the chemical concentration in a given medium that a potential receptor may encounter at an exposure area. The EPCs used to evaluate potential exposures at the 9 Tufts Street (Right Unit), 17 Tufts Street, and 19 Tufts Street properties are consistent with the EPCs selected for the “Tufts Street and MBTA Railroad Area” exposure area presented in the prior Site-wide Risk Characterizations; the EPCs for 95 Franklin Street, 17 Knowlton Street, 10 Morton Street, 18 Morton Street, 19-19A Morton Street, and 117 Washington Street are consistent with the EPCs selected for the “Other Streets Area” exposure area presented in prior Site-wide Risk Characterization. Summaries of soil, outdoor air, and indoor air EPCs used in this SHE are presented in Tables RC-15 and RC-16. EPCs were calculated as described below. If a COPC was not detected, then one-half the lowest laboratory reporting limit was assumed.

- The maximum detected soil concentrations from accessible surface soil (unpaved and located 0 to 3 ft bgs) within the “Tufts Street and MBTA Railroad Area” or “Other Streets Area” exposure areas were conservatively designated as the soil EPCs for each COPC.
- The arithmetic means of measured concentrations in outdoor air were used to represent the outdoor air EPCs for each COPC.
- Data for COPCs detected at least once in indoor air were processed in the following manner. First, any field duplicate samples collected from the first floor or basement were averaged using one-half the laboratory reporting limit for non-detects. Next, results from each sampling event were combined as a spatially weighted average assuming that a resident spends 12 hours per day in the basement and the remaining 12 hours per day on the first floor or 4 hours per day in the basement and the remaining 20 hours per day on the first floor (see Section 5.1). If indoor air sampling was only conducted in the basement or first floor during a given sampling event, that result was used. Lastly, if three or more rounds of indoor air sampling were conducted, results were averaged across the sampling events. If less than three rounds of indoor air sampling were available, the maximum result from each sampling event was used. These temporal averages or temporal maxima were selected as the indoor air EPCs. COPCs that were not detected above their respective laboratory reporting limits were assumed to be present at one-half those reporting limits.

5.6 Quantification of Potential Exposures

The equations and assumptions used to evaluate potential exposures to COPCs at 9 Tufts Street (Right Unit), 17 Tufts Street, 19 Tufts Street, 95 Franklin Street, 17 Knowlton Street, 10 Morton Street, 18 Morton Street, 19-19A Morton Street, and 117 Washington Street are described below. These equations are consistent with equations presented by MassDEP (1995) and risk assessment guidance issued by U.S. EPA (1989). Exposure assumptions used in this SHE are presented in Table RC-17.

The Average Daily Dose (ADD) was calculated to estimate a receptor's potential daily intake from exposure to compounds with potential noncarcinogenic effects. According to MassDEP (1995) and U.S. EPA (1989), the exposure dose should be calculated by averaging over the period of time for which the receptor is assumed to be exposed. This SHE considers an exposure period of 13 years in accordance with 310 CMR 40.0956 (2003 to the present with an additional five years). Subsequently, the ADD for each compound via each route of exposure was compared to the noncarcinogenic toxicity value (that is, the RfD or RfC) for that compound in order to estimate the potential noncarcinogenic hazard index due to exposure to that compound via that route of exposure.

For compounds with potential carcinogenic effects, the lifetime average daily dose (LADD) was calculated to estimate potential exposures over the course of a lifetime (70 years). Subsequently, the LADD for each compound via each route of exposure was multiplied by the CSF or UR for that compound to estimate the potential carcinogenic risk due to exposure to that compound via that route of exposure.

The equations used to estimate ADDs and LADDs are presented below. The human exposure parameters used in each potential exposure pathway are presented in Table RC-17. The spreadsheets used to calculate ADD and LADD from these equations and parameters are contained in Appendix A to this report.

5.6.1 Soil

Exposure to soil was assumed to occur via incidental ingestion and dermal contact. ADDs and LADDs for soil ingestion were calculated as follows:

$$\mathrm{ADD}_{\mathrm{ing}} = \frac{\mathrm{C}_{\mathrm{soil}} \times \mathrm{IR}_{\mathrm{soil}} \times \mathrm{FI} \times \mathrm{RAF}_{\mathrm{os}} \times \mathrm{CF} \times \mathrm{EF} \times \mathrm{EP}}{\mathrm{AT} \times \mathrm{BW}}$$

where:

ADD_{ing} = Average Daily Dose Due to Ingestion (mg/kg-day)
$LADD_{ing}$ = Lifetime Average Daily Dose Due to Ingestion (mg/kg/day)
C_{soil} = Compound Concentration in Soil (mg/kg)
IR_{soil} = Soil Ingestion Rate (mg/day)
FI = Fraction of Soil Ingested From the Site (unitless)
RAF_{os} = Relative Absorption Factor (Oral-Soil) (unitless)
CF = Conversion Factor (10^{-6} kg/mg)
EF = Exposure Frequency (days/year)
EP = Exposure Period (years)
BW = Body Weight (kg)
AT = Averaging Time (EP x 365 days/yr, ADD; 70yr x 365 days/yr, LADD)

ADDs and LADDs for dermal absorption were calculated as follows:

$$ADD_{der} = \frac{C_{soil} \times SA \times AF \times RAF_{ds} \times CF \times EF \times EP}{AT \times BW}$$

where:

ADD_{der} = Average Daily Dose Due to Dermal Contact (mg/kg-day)
$LADD_{der}$ = Lifetime Average Daily Dose Due to Dermal Contact (mg/kg/day)
C_{soil} = Compound Concentration in Soil (mg/kg)
SA = Skin Surface Area Exposed (cm^2/day)
AF = Soil to Skin Adherence Factor (mg/cm^2)
RAF_{ds} = Relative Absorption Factor (Dermal-Soil) (unitless)
CF = Conversion Factor (10^{-6} kg/mg)
EF = Exposure Frequency (days/year)
EP = Exposure Period (years)
BW = Body Weight (kg)
AT = Averaging Time (EP x 365 days/yr, ADD; 70yr x 365 days/yr, LADD)

The calculation of a LADD as opposed to an ADD is simply a matter of averaging time (AT).

5.6.2 Inhalation of Particulates

Inhalation of particulates (fugitive dust) was also evaluated. Exposure via inhalation of soil-derived fugitive dust is a function of the concentration at the source (e.g., soil), frequency and duration of contact, and a factor describing the concentration of compound in respirable particles in air.

MassDEP (2002a) considers that potential exposure via inhalation of dust occurs via two uptake pathways: uptake by the gastrointestinal (GI) tract following coughing up and subsequent swallowing of particulates trapped by the mucosa of the upper respiratory tract, and uptake by the respiratory system following inhalation into the lungs. To calculate the exposure associated with these two uptake pathways, MassDEP (2002a) assumes the following for the construction worker scenario (which was also conservatively used for other receptors):

1. 100% of respirable particulate mass (PM) is equal to or less than 30 microns in diameter ($\leq PM_{30}$).

2. 40% of total respiratory PM is equal to or less than 10 microns in diameter ($\leq PM_{10}$).

3. 100% of inhaled particulates greater than 10 microns but less than or equal to 30 microns are swallowed. 50% of inhaled particulates equal to or less than 10 microns are swallowed.

4. 50% of inhaled particulates equal to or less than 10 microns enters the lungs.

Based on these assumptions, the effective exposure concentration of respirable particulates for the GI system is 2 times the concentration of PM_{10}, while that for the lungs is 0.5 times the concentration of PM_{10}. Using these effective exposure concentrations, Oil or Hazardous Material (OHM) average daily doses for the GI and respiratory systems can be estimated using the following equations.

ADD for the GI System ($ADD_{inhalation\text{-}GI}$):

$$ADD_{inhalation-GI} = \frac{[C_{part}] \times 2 \times [PM_{10}] \times IR_{air} \times RAF_i \times ET \times EF \times EP \times C}{BW \times AT}$$

where:

$ADD_{inhalation\text{-}GI}$ = Average Daily Dose due to coughing up and subsequent ingestion of inhaled particulates; expressed in mg/kg-day
$[C_{part}]$ = Concentration of OHM in airborne particulates
$[PM_{10}]$ = Concentration in air of particulates less than or equal to 10 microns in diameter
IR_{air} = Inhalation rate for the receptor of concern during the period of exposure
RAF_i = Relative Absorption Factor (inhalation)
ET = Duration of each exposure event (hr/day)
EF = Exposure frequency (days/year)
EP = Duration of the exposure period (years)
C = Appropriate unit conversion factor
BW = Body weight of the receptor of concern during the averaging period
AT = Averaging time

ADD for the Respiratory System ($ADD_{inhalation}$):

$$ADD_{inhalation} = \frac{[C_{part}] \times 0.5 \times [PM_{10}] \times IR_{air} \times RAF_i \times ET \times EF \times EP \times C}{BW \times AT}$$

where:

$ADD_{inhalation}$ = Average Daily Dose Due to inhaled particulates entering the lungs (mg/kg-day)
$[C_{part}]$ = Concentration of OHM in airborne particulates (mg/kg)
$[PM_{10}]$ = Concentration in air of particulates less than 10 microns in diameter ($\mu g/m^3$)
IR_{air} = Inhalation rate (m^3/hr)
RAF_i = Relative Absorption Factor
ET = Duration of each exposure event (hr/day)

EF = Exposure frequency (days/yr)
EP = Duration of the exposure period (years)
C = Appropriate unit conversion factor (10^{-9} kg/µg)
BW = Body weight (kg)
AT = Averaging time (d)

Dose-response values for inhalation exposure (i.e., UR and RfC) are expressed on a mass of compound per volume of air basis, using the assumption that a person weighs 70 kilograms (kg) and has a daily inhalation rate (Inh_{day}) of 20 cubic meters (m^3). Therefore, prior to the characterization of risk, $ADD_{inhalation}$ (mg/kg-day) for the compound must be converted to an average daily exposure ($ADE_{inhalation}$) (mg/m^3) in order to make it compatible with the corresponding dose-response values. This can be accomplished using the following equation:

$$ADE_{inhalation} = \frac{ADD_{inhalation} \times BW_{assumed}}{Inh_{assumed}}$$

where:

$ADE_{inhalation}$ = Average daily oil/hazardous material concentration to which a receptor is exposed (mg/m^3)
$ADD_{inhalation}$ = Average daily dose due to inhaled particulates entering the lungs (mg/kg-day)
$BW_{assumed}$ = Body weight assumed in the development of RfCs and UR factors (70 kg)
$Inh_{assumed}$ = Daily inhalation rate assumed in the development of RfCs and UR factors (20 m^3/day)

For the evaluation of a resident, a PM_{10} concentration of 32 µg/m^3 was used (MassDEP 1995)

5.6.3 Inhalation of Indoor and Ambient Air

Inhalation exposures to ambient or indoor air are evaluated using RfCs and URs. These values represent a level of risk or hazard associated with hypothetically continuous exposure (i.e., 24 hours per day for a lifetime). Therefore, these toxicity factors must be used with an Average Daily Exposure (ADE) rather than an ADD as calculated for oral or dermal exposures. The ADE is simply the estimated exposure point concentration adjusted for non-continuous exposures:

$$ADE = C_{air} \times AF$$

where:

ADE = Average Daily Exposure (µg/m^3-day)

C_{air} = Concentration of COPC in air
AF = Adjustment Factor (unitless)

and where:

$$AF = \frac{ED \times EF \times EP}{24\,{}^{hr}\!/_{d} \times 365\,{}^{d}\!/_{y} \times AP}$$

where:

ED = exposure duration (hr/day)
EF = exposure frequency (days/yr)
EP = exposure period (years)
AP = averaging period (years)

As discussed above, this SHE assumes that a homebound resident is exposed to the indoor pathway 365 days per year for 24 hours per day. Exposure durations and frequencies for a non-homebound resident are adjusted to account for both indoor and outdoor exposure pathways. The current resident receptor was evaluated assuming an exposure period of 13 years.

5.6.4 Relative Absorption Factors

The premise of calculating risk or hazard using toxicity data from laboratory experiments is that potential human exposure dose is similar to the administered dose or applied dose in the laboratory experiment. The animal-derived CSFs and RfDs used in quantitative risk assessment were based on applied doses in most cases. However, the efficiency of COPC absorption via a particular route and from a particular matrix (e.g., soil, water) at the Site may differ from the absorption efficiency for the exposure route and matrix used in the experimental study that serves as the basis for the CSF or RfD. RAFs are used to adjust the exposure dose based on these two absorption efficiencies. As recommended by MassDEP (1995) and U.S. EPA (1989), RAFs for COPCs were derived and used in the calculation of human exposure doses.

Relative Absorption Factors (RAFs) used in this Risk Characterization are shown in Table RC-18. The RAFs were obtained from MassDEP (2008b). For COPCs that were not listed in MassDEP (2008b), ARCADIS has derived RAFs using standard approaches as used by MassDEP (2008b).

6. RISK CHARACTERIZATION

Risk characterization includes estimates of the potential human health risks from exposure to noncarcinogens, both in the long term (chronic) and short term (acute). It also includes an assessment of the potential excess cancer risk from exposure to known and possible carcinogens.

6.1 Noncarcinogenic Risk Characterization

The potential for exposures to COPCs identified at each exposure area to result in adverse noncarcinogenic health effects was estimated for each receptor by comparing the ADD for each compound with the RfD for that compound or by comparing the ADE to the RfC. The resulting ratio is known as the Hazard Quotient (HQ) for that compound. The HQ was calculated using the following formula:

$$HQ = \frac{ADD}{RfD}$$

where:

HQ = Hazard Quotient (unitless)
ADD = Average Daily Dose (mg/kg-day)
RfD = Reference Dose (mg/kg-day) or RfC.

When an HQ for a given compound does not exceed 1, the RfD or RfC has not been exceeded, and no adverse noncarcinogenic health effects are expected to occur. The HQs for each compound were summed to yield the HI for that pathway. A total HI for a chemical was then calculated for each receptor by summing the pathway-specific HIs.

Estimated total HIs for the evaluated exposure pathways and receptors at 9 Tufts Street (Right Unit), 17 Tufts Street, 19 Tufts Street, 95 Franklin Street, 17 Knowlton Street, 10 Morton Street, 18 Morton Street, 19-19A Morton Street, and 117 Washington Street are presented in Tables RC-19 through RC-27. The results of the SHE demonstrate that the non-cancer risks associated with the evaluated exposure scenarios are below MassDEP's target HI of 1. Estimates of non-cancer risks from indoor air to the receptor with greatest exposure, the homebound resident, are below the target HI of 1, as are estimates of non-cancer risks from outdoor pathways and cumulative non-cancer risks from all evaluated indoor and outdoor pathways to current residents at 9 Tufts Street (Right Unit), 17 Tufts Street, 19 Tufts Street, 95 Franklin Street, 17 Knowlton Street, 10 Morton Street, 18 Morton Street, 19-19A Morton Street, and 117 Washington Street. These results indicate that a condition of "No Substantial Hazard" exists for non-cancer effects of current exposures at these properties.

The results of the April 2011 Risk Characterization Report indicated that a condition of No Significant Risk exists for non-cancer effects of current exposures at all other properties located within the disposal site boundaries. This SHE considers an exposure period of 13 years, and the April 2011 Risk Characterization Report assumed a longer period of exposure for most commercial and residential receptors (27 years for a commercial worker and 30 years for a resident). Since "No Significant Risk" for non-cancer effects was demonstrated for the more highly exposed current receptors, it is indicative of "No Substantial Hazard" to less exposed receptors. The results of the April 2011 Risk Characterization have been confirmed for 32 Knowlton Street, 35-37 Knowlton Street, 60 Tufts Street (Unit 5), and 27 Tufts Street via recent indoor air sampling. Therefore, a condition of "No Substantial Hazard" also exists for non-cancer effects of current exposures at these properties. An exception was made in the April 2011 Risk Characterization for 95 Franklin Street, which was evaluated at an exposure duration of 5 years in anticipation of installation of an additional EPEM that was implemented at the property in the interim between the April 2011 Risk Characterization Report and the ROS Report. As noted above, the results of the SHE indicate that a condition of "No Substantial Hazard" exists for non-cancer effects of current exposures at 95 Franklin Street.

6.2 Carcinogenic Risk Characterization

The purpose of carcinogenic risk characterization is to provide a conservative estimate of the likelihood, over and above the background cancer rate, that a receptor will develop cancer in his or her lifetime as a result of exposures to COPCs in various environmental media, assuming but not endorsing the premises established by regulatory authorities (e.g., use of animal studies to estimate carcinogenic potency based on a carcinogenic dose-response relationship that is linear at low doses). This likelihood is a function of the dose of a compound and the CSF for that compound. The relationship between the ELCR and the estimated LADD of a compound may be expressed as:

$$\mathrm{ELCR} = 1 - e^{-\mathrm{CSF} \times \mathrm{LADD}}$$

where:

ELCR = Excess Lifetime Cancer Risk (unitless)
CSF = Cancer Slope Factor ($(\text{mg/kg-day})^{-1}$)
LADD = Lifetime Average Daily Dose (mg/kg-day)

When the product of the CSF and the LADD is much greater than 1, the ELCR approaches 1 (i.e., 100% probability). When the product is less than 0.01 (1×10^{-2}), the equation can be closely approximated by:

$$\mathrm{ELCR} = \mathrm{CSF} \times \mathrm{LADD}$$

The product of the equation is unitless and provides a conservative estimate of the potential carcinogenic risk associated with a receptor's exposure to that compound via that pathway. ELCRs are calculated for each potentially carcinogenic compound. For each receptor, the potential ELCRs for each pathway by which the receptor is assumed to be exposed is calculated by summing the potential risks derived for each compound. A total potential ELCR is then calculated by summing the pathway-specific ELCRs.

Tables RC-19 through RC-27 present the total potential ELCRs calculated for current receptors at 9 Tufts Street (Right Unit), 17 Tufts Street, 19 Tufts Street, 95 Franklin Street, 17 Knowlton Street, 10 Morton Street, 18 Morton Street, 19-19A Morton Street, and 117 Washington Street. The results of the SHE indicate that cancer risks associated with the evaluated exposure scenarios are below MassDEP's target ELCR of $1x10^{-5}$. Estimates of cancer risks from indoor air to the receptor with greatest exposure, the homebound resident, are below the target ELCR of $1x10^{-5}$, as are estimates of cancer risks from outdoor pathways and cumulative cancer risks from all evaluated indoor and outdoor pathways to current residents at 9 Tufts Street (Right Unit), 17 Tufts Street, 19 Tufts Street, 95 Franklin Street, 17 Knowlton Street, 10 Morton Street, 18 Morton Street, 19-19A Morton Street, and 117 Washington Street. These results indicate that a condition of “No Substantial Hazard” exists for cancer effects of current exposures at these properties.

The results of the April 2011 Risk Characterization Report indicated that a condition of No Significant Risk exists for potential cancer effects of current exposures at all other properties located within the disposal site boundaries. This SHE considers an exposure period of 13 years, and the April 2011 Risk Characterization Report assumed a longer period of exposure for most commercial and residential receptors (27 years for a commercial worker and 30 years for a resident). Since “No Significant Risk” for potential cancer effects was demonstrated for the more highly exposed current receptors, it is indicative of “No Substantial Hazard” to less exposed receptors. The results of the April 2011 Risk Characterization have been confirmed for 32 Knowlton Street, 35-37 Knowlton Street, 60 Tufts Street (Unit 5), and 27 Tufts Street via recent indoor air sampling. Therefore, a condition of “No Substantial Hazard” also exists for potential cancer effects of current exposures at these properties. An exception was made in the April 2011 Risk Characterization for 95 Franklin Street, which was evaluated at an exposure duration of 5 years in anticipation of installation of an additional EPEM that was implemented at the property in the interim between the April 2011 Risk Characterization Report and the ROS Report. As noted above, the results of the SHE indicate that a condition of “No Substantial Hazard” exists for potential cancer effects of current exposures at 95 Franklin Street.

7. ECOLOGICAL SUBSTANTIAL HAZARD EVALUATION

As stated in the MCP, the focus of an ecological SHE is on any “environmental resource areas, such as wetlands, aquatic and terrestrial habitats, and fisheries, that exist at a site” (310 CMR 40.0956). A condition of “No Substantial Hazard” to the environment exists at a site if steps have been taken to eliminate or mitigate any of six conditions affecting environmental resources at the site:

1. Evidence of stressed biota attributable to the release at the disposal site, including, without limitation, fish and wildlife kills or abiotic conditions;

2. The visible presence of oil, tar or other non-aqueous phase hazardous material in soil within three feet of the ground surface over an area equal to or greater than two acres, or over an area equal to or greater than 1,000 square feet in sediment within one foot of the sediment surface;

3. Continuing discharge of contaminated groundwater to surface water where the levels of the oil or hazardous material attributable to the release already exceed Massachusetts Surface Water standards;

4. Continuing discharge of contaminated groundwater to surface water where surface water and/or sediment concentrations of Oil and/or Hazardous Material attributable to the release already pose a significant risk;

5. Migration of oil or hazardous material to additional environmental media or resource area where resultant exposures would have the potential to pose a significant risk of harm in the future; or

6. Ecological risk or harm such that recovery would be substantially more difficult or would require more time if conditions were to remain unremediated for even a short period of time.

The Site meets the conditions of “No Substantial Hazard” to the environment for the following reasons:

- There is no evidence of stressed biota. There are no reports of fish or wildlife kills at the Site or reports of biota stressed from abiotic conditions attributable to the Site.

- Visible separate-phase material has not been observed in soil within three feet of the ground surface over an area equal to or greater than two acres.

- Groundwater attributable to the Site is not discharging to surface water at levels that exceed Massachusetts surface water standards. A Method 3 Risk Characterization of chlorinated volatile organic constituents (VOCs) in water collected in an MBTA storm drain (RTN 3-28231; AMEC 2009), which combines stormwater from the vicinity of the Site as well as groundwater that may infiltrate from the Site, found that concentrations of chlorinated VOCs in the storm drain were multiple orders of magnitude below Massachusetts surface water standards.

- Constituents in groundwater attributable to the Site are not discharging to surface water such that levels in surface water or sediment pose a significant risk. AMEC (2009) demonstrated that concentrations of chlorinated VOCs in a storm drain that incorporates groundwater that may infiltrate from the Site posed “No Significant Risk” to terrestrial or aquatic receptors.

- There is no evidence to suggest that Site-related constituents will migrate to other media or migrate to other areas such that they may pose a potentially significant risk in the future.

- No conditions appear to exist that would, if not remediated for even a short time, result in substantially more difficult recovery from potential ecological risk or harm.

Based on the above information, a condition of “No Substantial Hazard” to the environment exists at the Site, in accordance with the MCP.

8. UNCERTAINTY ANALYSIS

Within any of the four steps of the risk assessment process, assumptions must be made due to a lack of absolute scientific knowledge. Some of the assumptions are supported by considerable scientific evidence, while others have less support. Every assumption introduces some degree of uncertainty into the risk assessment process. Conservative assumptions are made throughout the risk assessment to ensure that the health of local residents and the environment are protected. Therefore, when all of the assumptions are combined, it is much more likely that actual risks, if any, are over-estimated rather than under-estimated.

The assumptions that introduce the greatest amount of uncertainty in this risk assessment are discussed in this section. They are discussed in general terms, because for most of the assumptions there is not enough quantitative information to assign a numerical value that can be factored into the calculation of risk.

8.1 Hazard Identification

In the April 2011 Risk Characterization Report, a condition of “No Significant Risk” was not achieved for 9 Tufts Street (Right Unit), 17 Tufts Street, and 19 Tufts Street due primarily to risks estimated from exposures to PCE and/or TCE in indoor air. As shown in Tables RC-5, RC-6, and RC-7, the most recent indoor air data were collected in December 2006. Groundwater data collected from the four monitoring wells within the “Tufts Street and MBTA Railroad Area” exposure area in 2007 and 2008 indicated substantially lower concentrations of PCE and TCE in groundwater compared to 2006 data. While a correlation between these groundwater concentrations and potential indoor air concentrations at 9 Tufts Street (Right Unit), 17 Tufts Street, and 19 Tufts Street is difficult to assess, particularly because these properties are close to the source area at 50 Tufts Street, the available groundwater data suggest that current indoor air concentrations of PCE and TCE at these properties are likely to be lower than those measured in 2006.

8.2 Dose-Response Assessment

Dose-response values are usually based on limited toxicological data. For this reason, a margin of safety is built into estimates of both carcinogenic and noncarcinogenic risk, and actual risks may be lower than those estimated.

Human dose-response values are often extrapolated, or conservatively estimated, using the results of animal studies. Extrapolation from animals to humans introduces a great deal of uncertainty in the risk assessment because, in most instances, it is not known how differently a human may react to the chemical compared to the animal species used to test the compound. The procedures used to extrapolate from animals to humans involve conservative assumptions and incorporate several uncertainty factors (explicit factors for species extrapolation, and possible sensitive populations in the case of the RfD) that are more likely to over-estimate than under-estimate the no-effect dose in humans.

8.3 Exposure Assessment

During the exposure assessment, average daily doses of COPCs to which receptors are potentially exposed are calculated, which involves assumptions about how often exposure occurs. Such assumptions include location, accessibility, and use of an area. With this in mind, the receptor, or person who may potentially be exposed, and the location of exposure were both defined for this SHE. The locations where certain activities were assumed to take place have been purposely selected because chemical concentrations and frequency of exposure are expected to be high (i.e., use of the maximally affected areas). However, actual frequencies of exposure are likely to be much lower than assumed. In these cases, the person's potential exposure would be reduced, and the health risks discussed here would be overestimated.

As requested by MassDEP, the time-weighted average used to calculate EPCs for the current residential scenario conservatively assumes, in any instance where the basement has at least 7 feet of headroom (or measurements are not available), that a receptor spends 12 hours in the basement and 12 hours on the first floor. Where the basement does not have at least 7 feet of headroom (typical uses include storage and/or laundry), the current residential scenario still assumes that a receptor spends 4 hours in the basement and 20 hours on the first floor every day. The basements at 9 Tufts Street (Right Unit), 17 Tufts Street, 19 Tufts Street, 95 Franklin Street, 17 Knowlton Street, 10 Morton Street, 18 Morton Street, 19-19A Morton Street, and 117 Washington Street are not currently used as living space, and evidence suggests that these basements have not been historically used as living space. Considering the evidence of historic use of these basements and current zoning and permitting requirements, it is unlikely that any of them will be converted to living space in the foreseeable future. As such, indoor air exposures presented within this SHE are an overestimate of likely exposures within these residences.

8.4 Risk Characterization

The risk of adverse human health effects depends on estimated levels of exposure and on dose-response relationships. Once exposure to and risk from each of the selected compounds is calculated, the total risk posed by exposure to soil is determined by combining the health risk contributed by each compound. Where COPCs do not interact, do not affect the same target organ or do not have the same mechanism of action, summing the risks for multiple COPCs results in an over-estimate of risk posed by the property. However, in order not to understate the risk, it is assumed that the effects of different compounds may be added together. While there does exist the theoretical possibility of greater than additive effects (synergism) among compounds with effects on the same target organ, the phenomenon of less than additive effects (antagonism) is well-recognized in the toxicology literature. Overall, the application of the assumption of additivity provides a conservative estimate of health risks.

This SHE was conducted using conservative assumptions. The maximum detected analytes in accessible surface soil were conservatively used to estimate worst-case risks within the “Tufts Street and MBTA Railroad Area” and “Other Streets Area” exposure areas. Actual risks for all locations within the “Tufts Street and MBTA Railroad Area” and “Other Streets Area” exposure areas, except in the vicinity of the specific sample locations where these maximum concentrations were detected, are lower than those reported in the result tables of this report.

Consistent with MassDEP's Indoor Air Sampling and Evaluation Guide (MassDEP 2002b), the indoor air EPCs for COPCs are defined in the SHE as the temporal average concentrations when a robust data set was available for a residence (three rounds of samples with one round being taken during winter conditions) and temporal maximum concentrations when this robust data set was not available. This is a conservative approach to characterizing human health risk. Where available, results of sampling taken over the course of multiple seasons provide a representative range of potential exposures, and the average of those results provides a representative "time-integrated average concentration to which an inhabitant may be exposed over the longer term" (MassDEP 2002b). This SHE makes the conservative assumption that, contrary to any known instance at the Site, individuals are continuously exposed to measured concentrations every hour of every day of every year within the applicable exposure period, without ever leaving the Site.

9. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Currently available data from Site assessment activities, as well as information from other sources (e.g., MassDEP and U.S. EPA guidance documents), were used to conduct the SHE for the 50 Tufts Street Site (RTN 3-23246) in Somerville, Massachusetts. The results of the April 2011 Risk Characterization Report indicated that, with the exception of potential indoor air exposures at 9 Tufts Street (Right Unit), 17 Tufts Street, and 19 Tufts Street, all current uses of the Site meet a condition of No Significant Risk to health, safety, public welfare, and the environment. This SHE considered an exposure period of 13 years in accordance with 310 CMR 40.0956 (2003 to the present with an additional five years), and the April 2011 Risk Characterization Report assumed a higher period of exposure for most commercial and residential receptors (27 years for a commercial worker and 30 years for a resident), with the exception of 95 Franklin Street, which was evaluated at an exposure duration of 5 years in anticipation of installation of an additional EPEM that was implemented at the property in the interim between the April 2011 Risk Characterization Report and the ROS Report. Thus, the results of the April 2011 Risk Characterization Report already have demonstrated the absence of a Substantial Hazard at all portions of the Site other than the 9 Tufts Street (Right Unit), 17 Tufts Street, 19 Tufts Street, and 95 Franklin Street properties. The SHE results presented above for 9 Tufts Street (Right Unit), 17 Tufts Street, 19 Tufts Street, and 95 Franklin Street indicate that a Substantial Hazard also does not exist for these properties.

Additional post-EPEM or post-EPEM modification indoor air samples were collected at several properties after the February 14, 2011 cut-off date for data included in the April 2011 Risk Characterization Report and before the July 1, 2011 cut-off date for data included in this SHE. Non-detects of COPCs in samples at 32 Knowlton Street, 35-37 Knowlton Street, 60 Tufts Street (Unit 5), and 27 Tufts Street, confirmed that the indoor air pathway is incomplete and that the results of the April 2011 Risk Characterization support that a Substantial Hazard does not exist at these properties. COPCs were detected in indoor air samples recently collected at 17 Knowlton Street, 10 Morton Street, 18 Morton Street, 19-19A Morton Street, 117 Washington Street, and 95 Franklin Street. As such, EPCs previously presented for these properties in prior reports were updated to include new data, and current risks were re-evaluated in this SHE. The SHE results presented above for 17 Knowlton Street, 10 Morton Street, 18 Morton Street, 19-19A Morton Street, 117 Washington Street, and 95 Franklin Street indicate that a Substantial Hazard does not exist for these properties.

An ecological SHE was conducted in accordance with the conditions set forth in 310 CMR 40.0956. A condition of “No Substantial Hazard” to the environment exists at the Site.

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Table RC-1
Risk Characterization Data - Soil
Tufts Street and MBTA Railroad Area Exposure Area
Somerville, Massachusetts

		Location Name:	**23 Tufts Street**
		Sample Name:	**23TUFT-BS**
		Sample Depth (ft):	**0.5 to 0.8**
		Sample Date:	**2/1/2008**
Analyte	**Method**	**Units**	
Volatile Organic Compounds (VOCs)	SW 8260	mg/kg	
Carbon tetrachloride			< 0.17
Chloroethane			< 0.43
Chloroform			NT
1,1-Dichloroethane			< 0.17
1,1-Dichloroethylene			< 0.17
cis-1,2-Dichloroethylene			< 0.17
trans-1,2-Dichloroethylene			< 0.17
Tetrachloroethylene (PCE)			0.0994 J
1,1,1-Trichloroethane (TCA)			< 0.17
Trichloroethylene (TCE)			< 0.17
Vinyl chloride			< 0.17

General Notes:

1. Only analytes used in the risk characterization are reported here.
2. "<" = The analyte was not detected at a concentration above the specified reporting limit.
3. mg/kg = milligrams per kilogram.
4. NT = not tested.
5. For 0-3 foot soil EPCs, 23 Tufts Street is the location of the maximum concentration for PCE. Concentrations for all other COPCs are 1/2 the detection limit (not shown).

Table RC-2
Risk Characterization Data - Soil
Other Streets Area Exposure Area
Somerville, Massachusetts

		Location Name:	MW101	MW112A
		Sample Name:	MW101S1	B112A (0-3')
		Sample Depth (ft):	2 to 3	0 to 3
		Sample Date:	4/27/2006	3/10/2007
Analyte	**Method**	**Units**		
Volatile Organic Compounds (VOCs)				
Carbon tetrachloride	8260	mg/kg	< 0.13	< 0.13
Chloroethane			< 0.33	< 0.31
Chloroform			< 0.13	< 0.13
Dichloroethane,1,1-			< 0.13	0.13 J
Dichloroethylene, cis-1,2-			< 0.13	< 0.13
Dichloroethylene,1,1-			< 0.13	< 0.13
Tetrachloroethylene (PCE)			0.989	0.13 J
Trans-1,2-Dichloroethylene			< 0.13	< 0.13
Trichloroethane,1,1,1- (TCA)			0.0767 J	< 0.13
Trichloroethylene (TCE)			0.358	< 0.13
Vinyl chloride			< 0.13	< 0.13

General Notes:

1. Only analytes used in the risk characterization are reported here.
2. "<" = The analyte was not detected at a concentration above the specified reporting limit.
3. mg/kg = milligrams per kilogram.
4. NT = not tested.
5. For 0-3 foot soil EPCs, MW101 is the location of the maximum concentration for PCE, TCE, and TCA. MW112A is the location of the maximum concentration for 1,1-dichloroethane. Concentrations for all other COPCs are 1/2 the detection limit (not shown).

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-3
Risk Characterization Data - Outdoor Air
Tufts Street and MBTA Railroad Area Exposure Area
Somerville, Massachusetts

	Location Name:	Tufts-O1									
	Sample Name:	TUFTS-O-1A		TUFTS-O-1B		TUFTS-O-1A		TUFTS-O-1B		TUFTS-O-1A	
	Sample Date:	3/23/2006		3/24/2006		6/28/2006		6/28/2006		9/28/2006	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	**Method**										
Volatile Organic Compounds (VOCs)	TO-15										
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	0.69 J	0.11 J	< 1.3	< 0.20
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
trans-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	1.2 J	0.18 J	8.1	1.2	< 1.4	< 0.20
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	0.65 J	0.12 J	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Vinyl chloride		< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.

Qualifying Notes:

G The result is estimated due to duplicate precision outside control limits.

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-3
Risk Characterization Data - Outdoor Air
Tufts Street and MBTA Railroad Area Exposure Area
Somerville, Massachusetts

	Location Name:	Tufts-O1 (continued)						Tufts-O2					
	Sample Name:	TUFTS-O-1B		TUFTS-0-1A		TUFTS-0-1B		TUFTS-O-2A		TUFTS-O-2B		TUFTS-O-2A	
	Sample Date:	10/2/2006		12/15/2006		12/18/2006		3/23/2006		3/24/2006		6/29/2006	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	**Method**												
Volatile Organic Compounds (VOCs)	TO-15												
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	0.82 J	0.13 J	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
trans-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 0.88 J	< 0.13 J	2.7	0.40	< 1.4	< 0.20	< 1.4	< 0.20	2.4	0.36
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Vinyl chloride		< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.

Qualifying Notes:

G The result is estimated due to duplicate precision outside control limits.

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-3
Risk Characterization Data - Outdoor Air
Tufts Street and MBTA Railroad Area Exposure Area
Somerville, Massachusetts

	Location Name:	Tufts-O2 (continued)									
	Sample Name:	TUFTS-O-2B		TUFTS-O-2A		TUFTS-O-2B		TUFTS-0-2A		TUFTS-0-2B	
	Sample Date:	6/29/2006		9/28/2006		10/2/2006		12/15/2006		12/18/2006	
	Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Analyte	**Method**										
Volatile Organic Compounds (VOCs)	TO-15										
Carbon tetrachloride		0.69 J	0.11 J	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20	0.60 J	0.095 J
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
trans-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Tetrachloroethylene (PCE)		5.4	0.80	< 1.4	< 0.20	1.6	0.24	2.0	0.30	2.8	0.41
1,1,1-Trichloroethane (TCA)		1.1	0.21	< 1.1	< 0.20	0.76 J	0.14 J	< 1.1	< 0.20	< 0.98 J	< 0.18 J
Trichloroethylene (TCE)		0.91 J	0.17 J	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 0.59 J	< 0.11 J
Vinyl chloride		< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.

Qualifying Notes:

G The result is estimated due to duplicate precision outside control limits.

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-3
Risk Characterization Data - Outdoor Air
Tufts Street and MBTA Railroad Area Exposure Area
Somerville, Massachusetts

	Location Name:	Tufts-O3		50 Tufts-North Parking Lot							
	Sample Name: Sample Date:	TUFTS-O-3A 10/2/2006		04516-50T-NP 5/1/2007		04516-NP 5/14/2007		50Tufts-NP 6/28/2007		50TUFTS-NP 10/4/2007	
	Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Analyte	**Method**										
Volatile Organic Compounds (VOCs)	TO-15										
Carbon tetrachloride		< 1.3	< 0.20	0.75 J	0.12 J	< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
trans-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	1.8	0.26	7.5	1.1	12 G	1.7 G	3.9	0.57
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	0.38 J	0.070 J	0.98 J	0.18 J	2.0	0.36	0.50 J	0.091 J
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	0.64 J	0.12 J	1.6	0.30	< 1.1	< 0.20
Vinyl chloride		< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20

General Notes:
1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.

Qualifying Notes:
G The result is estimated due to duplicate precision outside control limits.
J The reported result is below the laboratory reporting limit and is estimated.

Table RC-3
Risk Characterization Data - Outdoor Air
Tufts Street and MBTA Railroad Area Exposure Area
Somerville, Massachusetts

	Location Name:	50 Tufts-North Parking Lot (continued)						50 Tufts-South Parking Lot			
	Sample Name:	50T-NP		50TUFTS-NP		50TUFTS-NP2		04516-50T-SP		04516-SP	
	Sample Date:	12/7/2007		5/1/2008		10/4/2007		5/1/2007		5/14/2007	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	**Method**										
Volatile Organic Compounds (VOCs)	TO-15										
Carbon tetrachloride		0.69 J	0.11 J	0.63 J	0.10 J	< 1.3	< 0.20	0.69 J	0.11 J	0.63 J	0.1 J
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
trans-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Tetrachloroethylene (PCE)		2.2	0.33	0.65 J	0.096 J	7.5	1.1	3.7	0.54	2.8	0.42
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	1.2	0.22	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	0.75 J	0.14 J	< 1.1	< 0.20	< 1.1	< 0.20
Vinyl chloride		< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.

Qualifying Notes:

G The result is estimated due to duplicate precision outside control limits.

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-3
Risk Characterization Data - Outdoor Air
Tufts Street and MBTA Railroad Area Exposure Area
Somerville, Massachusetts

	Location Name:	50 Tufts-South Parking Lot (continued)									
	Sample Name: Sample Date:	50Tufts-SP 6/28/2007		50TUFTS-SP 10/4/2007		50T-SP 12/7/2007		50TUFTS-SP 5/1/2008		50TUFTS-SP2 10/4/2007	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	**Method**										
Volatile Organic Compounds (VOCs)	TO-15										
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	0.75 J	0.12 J	< 1.3	< 0.20	< 1.3	< 0.20
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20
1,1-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
cis-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
trans-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Tetrachloroethylene (PCE)		1.8 G	0.26 G	< 1.3 J	< 0.19 J	2.0	0.29	1.4	0.21	9.5	1.4
1,1,1-Trichloroethane (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	1.6	0.30	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Vinyl chloride		< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.

Qualifying Notes:

G The result is estimated due to duplicate precision outside control limits.

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-4
Risk Characterization Data - Outdoor Air
Other Streets Area Exposure Area
Somerville, Massachusetts

	Location Name:	**150 Glen-O1**					
	Sample Name:	**150 GLEN-0-1A**		**150 GLEN-0-1B**		**150 GLEN-0-1A**	
	Sample Date:	**12/27/2006**		**12/28/2006**		**1/6/2007**	
	Units:	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**
Analyte	**Method**						
Volatile Organic Compounds (VOCs)	TO-15						
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	0.52 J J+	0.083 J J+
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20
Dichloroethane,1,1-		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
Dichloroethane,1,2-		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
Dichloroethylene, cis-1,2-		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Dichloroethylene,1,1-		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Trans-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Trichloroethane,1,1,1- (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Vinyl chloride		< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20

General Notes:
1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "< " = The analyte was not detected at a concentration above the specified laboratory reporting limit.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.

J+ The reported result is estimated.

Table RC-4
Risk Characterization Data - Outdoor Air
Other Streets Area Exposure Area
Somerville, Massachusetts

	Location Name:	**150 Glen-O2**					
	Sample Name:	**150 GLEN-0-2A**		**150 GLEN-0-2B**		**150 GLEN-0-2A**	
	Sample Date:	**12/27/2006**		**12/28/2006**		**1/6/2007**	
	Units:	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**
Analyte	**Method**						
Volatile Organic Compounds (VOCs)	TO-15						
Carbon tetrachloride		1.1 J	0.17 J	< 1.3	< 0.20	0.52 J J+	0.082 J J+
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20
Dichloroethane,1,1-		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
Dichloroethane,1,2-		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
Dichloroethylene, cis-1,2-		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Dichloroethylene,1,1-		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Trans-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Trichloroethane,1,1,1- (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Vinyl chloride		< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "< " = The analyte was not detected at a concentration above the specified laboratory reporting limit.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.

J+ The reported result is estimated.

Table RC-4
Risk Characterization Data - Outdoor Air
Other Streets Area Exposure Area
Somerville, Massachusetts

	Location Name:	150 Glen-Roof					
	Sample Name:	150 GLEN-ROOF B		150 GLEN-ROOF		150GLEN-ROOF	
	Sample Date:	2/8/2007		2/8/2007		3/8/2007	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	**Method**						
Volatile Organic Compounds (VOCs)	TO-15						
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20
Dichloroethane,1,1-		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
Dichloroethane,1,2-		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
Dichloroethylene, cis-1,2-		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Dichloroethylene,1,1-		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Trans-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Trichloroethane,1,1,1- (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Vinyl chloride		< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "< " = The analyte was not detected at a concentration above the specified laboratory reporting limit.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.

J+ The reported result is estimated.

Table RC-4
Risk Characterization Data - Outdoor Air
Other Streets Area Exposure Area
Somerville, Massachusetts

	Location Name:	**150 Glen-Roof (continued)**					
	Sample Name:	**150 GLEN-ROOF**		**150 GLEN-ROOF**		**150GLEN-ROOF**	
	Sample Date:	**4/20/2007**		**5/17/2007**		**8/9/2007**	
	Units:	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**
Analyte	**Method**						
Volatile Organic Compounds (VOCs)	TO-15						
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20
Dichloroethane,1,1-		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
Dichloroethane,1,2-		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
Dichloroethylene, cis-1,2-		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Dichloroethylene,1,1-		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Trans-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Trichloroethane,1,1,1- (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Vinyl chloride		< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20

General Notes:
1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "< " = The analyte was not detected at a concentration above the specified laboratory reporting limit.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.

J+ The reported result is estimated.

Table RC-4
Risk Characterization Data - Outdoor Air
Other Streets Area Exposure Area
Somerville, Massachusetts

	Location Name:	**150 Glen-Roof (continued)**					
	Sample Name:	**150GLEN-ROOF**		**150GLEN-ROOF**		**150GLEN-ROOF**	
	Sample Date:	**10/14/2007**		**11/14/2007**		**12/17/2007**	
	Units:	**μg/m^3**	**ppbv**	**μg/m^3**	**ppbv**	**μg/m^3**	**ppbv**
Analyte	**Method**						
Volatile Organic Compounds (VOCs)	TO-15						
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	< 1.3	< 0.20
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20
Dichloroethane,1,1-		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
Dichloroethane,1,2-		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
Dichloroethylene, cis-1,2-		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Dichloroethylene,1,1-		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Trans-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Trichloroethane,1,1,1- (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Vinyl chloride		< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. μg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "< " = The analyte was not detected at a concentration above the specified laboratory reporting limit.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.

J+ The reported result is estimated.

Table RC-4
Risk Characterization Data - Outdoor Air
Other Streets Area Exposure Area
Somerville, Massachusetts

	Location Name:	**150 Glen-Roof (continued)**					
	Sample Name:	**150GLEN-ROOF**		**150GLEN ROOF**		**150GLEN-ROOF**	
	Sample Date:	**1/21/2008**		**3/17/2008**		**4/21/2008**	
	Units:	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**
Analyte	**Method**						
Volatile Organic Compounds (VOCs)	TO-15						
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20	0.69 J	0.11 J
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20	< 0.53	< 0.20
Dichloroethane,1,1-		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
Dichloroethane,1,2-		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
Dichloroethylene, cis-1,2-		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Dichloroethylene,1,1-		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20
Trans-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20	< 0.79	< 0.20
Trichloroethane,1,1,1- (TCA)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Vinyl chloride		< 0.51	< 0.20	< 0.51	< 0.20	< 0.51	< 0.20

General Notes:
1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "< " = The analyte was not detected at a concentration above the specified laboratory reporting limit.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.

J+ The reported result is estimated.

Table RC-4
Risk Characterization Data - Outdoor Air
Other Streets Area Exposure Area
Somerville, Massachusetts

	Location Name:	150 Glen-Roof (continued)			
	Sample Name:	150GLEN-ROOF		150GLEN-ROOF	
	Sample Date:	2/19/2008		9/10/2007	
	Units:	µg/m³	ppbv	µg/m³	ppbv
Analyte	**Method**				
Volatile Organic Compounds (VOCs)	TO-15				
Carbon tetrachloride		< 1.3	< 0.20	0.69 J	0.11 J
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20
Dichloroethane,1,1-		< 0.81	< 0.20	< 0.81	< 0.20
Dichloroethane,1,2-		< 0.81	< 0.20	< 0.81	< 0.20
Dichloroethylene, cis-1,2-		< 0.79	< 0.20	< 0.79	< 0.20
Dichloroethylene,1,1-		< 0.79	< 0.20	< 0.79	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	1.2 J	0.18 J
Trans-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20
Trichloroethane,1,1,1- (TCA)		< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20
Vinyl chloride		< 0.51	< 0.20	< 0.51	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "< " = The analyte was not detected at a concentration above the specified laboratory reporting limit.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.

J+ The reported result is estimated.

Risk Characterization Data - Outdoor Air

Other Streets Area Exposure Area

Somerville, Massachusetts

	Location Name:	Tufts-O5		Tufts-O6	
	Sample Name:	TUFTS-O-5A		TUFTS-O-6A	
	Sample Date:	10/2/2006		10/2/2006	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	**Method**				
Volatile Organic Compounds (VOCs)	TO-15				
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20
Chloroethane		< 0.53	< 0.20	< 0.53	< 0.20
Dichloroethane,1,1-		< 0.81	< 0.20	< 0.81	< 0.20
Dichloroethane,1,2-		< 0.81	< 0.20	< 0.81	< 0.20
Dichloroethylene, cis-1,2-		< 0.79	< 0.20	< 0.79	< 0.20
Dichloroethylene,1,1-		< 0.79	< 0.20	< 0.79	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20
Trans-1,2-Dichloroethylene		< 0.79	< 0.20	< 0.79	< 0.20
Trichloroethane,1,1,1- (TCA)		< 1.1	< 0.20	< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20
Vinyl chloride		< 0.51	< 0.20	< 0.51	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "< " = The analyte was not detected at a concentration above the specified laboratory reporting limit.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.

J+ The reported result is estimated.

Table RC-5
Risk Characterization Data - Indoor Air
9 Tufts Street (Right Unit)
Somerville, Massachusetts

	Location Name:	**9 Tufts Street**							
	Sample Name:	**9TUFTS-1R**		**9TUFTS-BR**		**9TUFTS-1R**		**9TUFTS-BR**	
	Sample Date:	**3/23/06**		**3/23/06**		**7/24/06**		**7/24/06**	
	Collected By:	**GEI**		**GEI**		**GEI**		**GEI**	
	Units:	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**	**µg/m³**	**ppbv**
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Tetrachloroethylene (PCE)		0.95 J	0.14 J	2.4	0.35	2.0	0.29	3.1	0.45

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. BR = Basement, right side of house.
6. 1R = First floor, right side of house.
7. Samples from 2005 were collected by Shaw Environmental, Inc. but were not included in the dataset because side of house (right or left) could not be identified.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-5
Risk Characterization Data - Indoor Air
9 Tufts Street (Right Unit)
Somerville, Massachusetts

	Location Name:	9 Tufts Street (continued)							
	Sample Name: Sample Date: Collected By:	9TUFTS-1R 10/2/06 GEI		9TUFTS-BR 10/2/06 GEI		9 TUFTS-1R 12/15/06 GEI		9 TUFTS-BR 12/15/06 GEI	
	Units:	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Tetrachloroethylene (PCE)		6.2	0.91	16	2.4	0.64 J	0.095 J	2.2	0.32

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. BR = Basement, right side of house.
6. 1R = First floor, right side of house.
7. Samples from 2005 were collected by Shaw Environmental, Inc. but were not included in the dataset because side of house (right or left) could not be identified.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-6
Risk Characterization Data - Indoor Air
17 Tufts Street
Somerville, Massachusetts

	Sample Location:	17 Tufts Street							
	Sample Name:	IA-12 (1)		IA-11 (B)		17TUFTS-1		17TUFTS-B	
	Sample Date:	3/24/05		3/24/05		3/24/06		3/24/06	
	Collected By:	Shaw		Shaw		GEI		GEI	
	Units:	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Tetrachloroethylene (PCE)		4.7	0.69	8.8	1.3	2.9	0.43	1.3 J	0.19 J
Trichloroethylene (TCE)		< 1.1	< 0.20	0.91 J	0.17 J	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. C = Duplicate of Basement (B) samples.
6. Samples from 2005 were collected by Shaw Environmental, Inc.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-6
Risk Characterization Data - Indoor Air
17 Tufts Street
Somerville, Massachusetts

	Sample Location:	17 Tufts Street (continued)							
	Sample Name:	17TUFTS-C (FD of B)		17TUFTS-1		17TUFTS-B		17TUFTS-C (FD of B)	
	Sample Date:	3/24/06		10/2/06		10/2/06		10/2/06	
	Collected By:	GEI		GEI		GEI		GEI	
	Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Tetrachloroethylene (PCE)		1.4	0.21	0.88 J	0.13 J	6.1	0.90	6.0	0.89
Trichloroethylene (TCE)		0.70 J	0.13 J	< 1.1	< 0.20	7.0	1.3	7.0	1.3

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. C = Duplicate of Basement (B) samples.
6. Samples from 2005 were collected by Shaw Environmental, Inc.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-6
Risk Characterization Data - Indoor Air
17 Tufts Street
Somerville, Massachusetts

	Sample Location:	17 Tufts Street (continued)					
	Sample Name:	17 TUFTS-1		17 TUFTS-B		17 TUFTS-C	
	Sample Date:	12/18/06		12/18/06		12/18/06	
	Collected By:	GEI		GEI		GEI	
	Units:	µg/m^3	ppbv	µg/m^3	ppbv	µg/m^3	ppbv
Analyte	**Method**						
Volatile Organic Compounds (VOCs)	TO-15						
Tetrachloroethylene (PCE)		1.5	0.22	2.0	0.30	< 1.4	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	0.70 J	0.13 J	< 1.1	< 0.20

General Notes:
1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. C = Duplicate of Basement (B) samples.
6. Samples from 2005 were collected by Shaw Environmental, Inc.

Qualifying Notes:
J The reported result is below the laboratory reporting limit and is estimated.

Table RC-7
Risk Characterization Data - Indoor Air
19 Tufts Street
Somerville, Massachusetts

	Sample Location:	**19 Tufts Street**									
	Sample Name:	**IA-14 (1)**		**IA-13 (B)**		**19TUFTS-1**		**19TUFTS-B**		**19TUFTS-C**	
	Sample Date:	**3/24/05**		**3/24/05**		**3/23/06**		**3/23/06**		**3/23/06**	
	Collected By:	**Shaw**		**Shaw**		**GEI**		**GEI**		**GEI**	
	Units:	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**
Analyte	**Method**										
Volatile Organic Compounds (VOCs)	TO-15										
Tetrachloroethylene (PCE)		0.95 J	0.14 J	3.2	0.47	1.2	0.18	7.5	1.1	6.6	0.98
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. C = Duplicate of Basement (B) samples.
6. Samples from 2005 were collected by Shaw Environmental, Inc.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-7
Risk Characterization Data - Indoor Air
19 Tufts Street
Somerville, Massachusetts

	Sample Location:	**19 Tufts Street (continued)**									
	Sample Name:	**19 TUFTS-1**		**19 TUFTS-B**		**19 TUFTS-C**		**19TUFTS-1**		**19TUFTS-B**	
	Sample Date:	**6/29/06**		**6/29/06**		**6/29/06**		**10/10/06**		**10/10/06**	
	Collected By:	**GEI**		**GEI**		**GEI**		**GEI**		**GEI**	
	Units:	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**
Analyte	**Method**										
Volatile Organic Compounds (VOCs)	TO-15										
Tetrachloroethylene (PCE)		2.4	0.35	4.1	0.60	3.8	0.56	< 1.4	< 0.20	15	2.2
Trichloroethylene (TCE)		1.7	0.31	2.1	0.39	1.6	0.30	< 1.1	< 0.20	6.4	1.2

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. C = Duplicate of Basement (B) samples.
6. Samples from 2005 were collected by Shaw Environmental, Inc.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-7
Risk Characterization Data - Indoor Air
19 Tufts Street
Somerville, Massachusetts

	Sample Location:	19 Tufts Street (continued)							
	Sample Name:	19TUFTS-C		19 TUFTS-1		19 TUFTS-B		19 TUFTS-C	
	Sample Date:	10/10/06		12/15/06		12/15/06		12/15/06	
	Collected By:	GEI		GEI		GEI		GEI	
	Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Tetrachloroethylene (PCE)		6.8	1.0	0.60 J	0.089 J	2.5	0.37	1.4	0.20
Trichloroethylene (TCE)		6.4	1.2	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. C = Duplicate of Basement (B) samples.
6. Samples from 2005 were collected by Shaw Environmental, Inc.

Qualifying Notes:

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-8
Risk Characterization Data - Indoor Air
95 Franklin Street
Somerville, Massachusetts

	Sample Location:	**95 Franklin Street post-EPEM modification**			
	Sample Name:	**95FRAN-1**		**95FRAN-B**	
	Sample Date:	**6/24/11**		**6/24/11**	
	Units:	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**
Analyte	**Method**				
Volatile Organic Compounds (VOCs)	TO-15				
Tetrachloroethylene (PCE)		1.5	0.22	2.7	0.40

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. The samples were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-9
Risk Characterization Data - Indoor Air
17 Knowlton Street
Somerville, Massachusetts

	Sample Location:	17 Knowlton Street post-EPEM													
	Sample Name:	17KNOW-1		17KNOW-B		17KNOW-1		17KNOW-B		17KNOW-B		17KNOW-1		17KNOW-B	
	Sample Date:	5/13/09		5/13/09		6/5/09		6/5/09		11/19/10		2/24/11		2/24/11	
	Units:	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv
Analyte	**Method**														
Volatile Organic Compounds (VOCs)	TO-15														
Tetrachloroethylene (PCE)		1.6	0.23	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	1.1 J	0.16 J	3.3	0.49

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. The samples collected after June 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-10
Risk Characterization Data - Indoor Air
10 Morton Street
Somerville, Massachusetts

	Sample Location:	**10 Morton Street post-EPEM**							
	Sample Name:	**10MORT-1**		**10MORT-B**		**10MORT-1**		**10MORT-B**	
	Sample Date:	**4/3/09**		**4/3/09**		**2/12/10**		**2/12/10**	
	Units:	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. The samples collected in February 2010 were collected over a 24-hour period from February 11 through 12, 2010.
7. The samples collected in November 2010 were collected over a 24-hour period from November 12 through 13, 2010.
8. The samples collected in December 2010 were collected over a 24-hour period from December 17 through 18, 2010.
9. The samples collected in March 2011 were collected over a 24-hour period from March 4 through 5, 2011.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-10
Risk Characterization Data - Indoor Air
10 Morton Street
Somerville, Massachusetts

	Sample Location:	**10 Morton Street post-EPEM (continued)**							
	Sample Name:	**10MORT-1**		**10MORT-B**		**10MORT-1**		**10MORT-B**	
	Sample Date:	**11/13/10**		**11/13/10**		**12/18/10**		**12/18/10**	
	Units:	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Trichloroethylene (TCE)		2.9	0.54	13	2.4	< 1.1	< 0.20	1.4	0.26

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. The samples collected in February 2010 were collected over a 24-hour period from February 11 through 12, 2010.
7. The samples collected in November 2010 were collected over a 24-hour period from November 12 through 13, 2010.
8. The samples collected in December 2010 were collected over a 24-hour period from December 17 through 18, 2010.
9. The samples collected in March 2011 were collected over a 24-hour period from March 4 through 5, 2011.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-10
Risk Characterization Data - Indoor Air
10 Morton Street
Somerville, Massachusetts

Sample Location:		**10 Morton Street post-EPEM (continued)**			
Sample Name:		**10MORT-1**		**10MORT-B**	
Sample Date:		**3/5/11**		**3/5/11**	
Units:		**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**
Analyte	**Method**				
Volatile Organic Compounds (VOCs)	TO-15				
Trichloroethylene (TCE)		< 1.1	< 0.20	2.4	0.45

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. The samples collected in February 2010 were collected over a 24-hour period from February 11 through 12, 2010.
7. The samples collected in November 2010 were collected over a 24-hour period from November 12 through 13, 2010.
8. The samples collected in December 2010 were collected over a 24-hour period from December 17 through 18, 2010.
9. The samples collected in March 2011 were collected over a 24-hour period from March 4 through 5, 2011.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-11
Risk Characterization Data - Indoor Air
18 Morton Street
Somerville, Massachusetts

	Sample Location:	18 Morton Street					
	Sample Name:	18MORT-B		18MORT-B		18MORT-B	
	Sample Date:	7/24/07		11/5/07		2/4/08	
	Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Analyte	**Method**						
Volatile Organic Compounds (VOCs)	TO-15						
Carbon tetrachloride		< 1.3	< 0.20	0.60 J	0.095 J	< 1.3	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20	< 0.81	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Tetrachloroethylene (PCE)		1.4	0.20	< 1.4	< 0.20	< 1.4	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. The samples collected in January 2009 (18MORT-1A and 1B, and 18MORT-B1 and B2) were field duplicates.
7. The samples collected after January 2009 were collected over a 24-hour period ending on the date shown.
8. **No pre-EPEM indoor air samples were collected. The EPEM was installed based on sub-slab soil vapor testing results.**

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-11
Risk Characterization Data - Indoor Air
18 Morton Street
Somerville, Massachusetts

		18 Morton Street							
	Sample Location:	**18 Morton Street**							
	Sample Name:	**18MORT-1A**		**18MORT-1B**		**18MORT-B1**		**18MORT-B2**	
	Sample Date:	**1/17/09**		**1/17/09**		**1/17/09**		**1/17/09**	
	Units:	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**	**µg/m^3**	**ppbv**
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Carbon tetrachloride		0.69 J	0.11 J	0.69 J	0.11 J	< 1.3	< 0.20	0.61 J	0.097 J
1,2-Dichloroethane		0.73 J	0.18 J	0.73 J	0.18 J	< 0.81	< 0.20	< 0.81	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20	< 1.1	< 0.20
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. The samples collected in January 2009 (18MORT-1A and 1B, and 18MORT-B1 and B2) were field duplicates.
7. The samples collected after January 2009 were collected over a 24-hour period ending on the date shown.
8. **No pre-EPEM indoor air samples were collected. The EPEM was installed based on sub-slab soil vapor testing results.**

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-11
Risk Characterization Data - Indoor Air
18 Morton Street
Somerville, Massachusetts

	Sample Location:	18 Morton Street			
	Sample Name:	18MORT-B		18MORT-B	
	Sample Date:	3/11/10		2/24/11	
	Units:	µg/m³	ppbv	µg/m³	ppbv
Analyte	Method				
Volatile Organic Compounds (VOCs)	TO-15				
Carbon tetrachloride		< 1.3	< 0.20	< 1.3	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20	< 0.81	< 0.20
Trichloroethylene (TCE)		1.5	0.28	< 1.1	< 0.20
Tetrachloroethylene (PCE)		2.8	0.41	1.5	0.22

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m^3 = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. EPEM = Exposure Pathway Elimination Measure.
6. The samples collected in January 2009 (18MORT-1A and 1B, and 18MORT-B1 and B2) were field duplicates.
7. The samples collected after January 2009 were collected over a 24-hour period ending on the date shown.
8. **No pre-EPEM indoor air samples were collected. The EPEM was installed based on sub-slab soil vapor testing results.**

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-12

Risk Characterization Data - Indoor Air

19-19A Morton Street

Somerville, Massachusetts

	Location Name:	Post-EPEM 19-19A Morton Street							
	Sample Name:	19MORT-1		19MORT-B		19MORT-1		19MORT-B	
	Sample Date:	9/3/09		9/3/09		1/29/10		1/29/10	
	Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20	< 1.4	< 0.20

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. EPEM = Exposure Pathway Elimination Measure.
5. The samples collected after January 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-12
Risk Characterization Data - Indoor Air
19-19A Morton Street
Somerville, Massachusetts

	Location Name:	Post-EPEM 19-19A Morton Street							
	Sample Name:	19MORT-1		19MORT-B		19MORT-1		19MORT-B	
	Sample Date:	12/7/10		12/7/10		4/10/11		4/10/11	
	Units:	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv
Analyte	**Method**								
Volatile Organic Compounds (VOCs)	TO-15								
Tetrachloroethylene (PCE)		3.1	0.45	4.8	0.71	< 1.4	< 0.20	2.2	0.33

General Notes:

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. EPEM = Exposure Pathway Elimination Measure.
5. The samples collected after January 2009 were collected over a 24-hour period ending on the date shown.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

Table RC-13
Risk Characterization Data - Indoor Air
117 Washington Street
Somerville, Massachusetts

	Sample Location:	117 Washington Street					
	Sample Name:	117WASH-1		117WASH-B		117WASH-1	
	Sample Date:	9/15/09		9/15/09		3/9/11	
	Units:	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv
Analyte	**Method**						
Volatile Organic Compounds (VOCs)	TO-15						
Tetrachloroethylene (PCE)		< 1.4	< 0.20	< 1.4	< 0.20	1.5	0.22

General Notes:
1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
5. The sample collected in March 2011 was collected over a 24-hour period ending on the date shown.

Table RC-14
Toxicity Information
50 Tufts Street
Somerville, Massachusetts

Compound	Reference Dose Oral Chronic Value (mg/kg-day)	Reference Dose Oral Subchronic Value (mg/kg-day)	Reference Concentration Inhalation Chronic Value (mg/m^3)	Reference Concentration Inhalation Subchronic Value (mg/m^3)	Cancer Slope Factor Oral Value (mg/kg-day)$^{-1}$	Unit Risk Inhalation Value (ug/m^3)$^{-1}$	Cancer Slope Factor Inhalation Value (mg/kg-day)$^{-1}$
Carbon tetrachloride	0.0007	0.007	0.43	0.43	0.13	0.000015	0.0525
Chloroethane	0.4[1]	0.4[1]	10[2]	10[2]	NA	NA	NA
Chloroform	0.01	0.01	0.66	0.66	NA	0.000023	0.0805
Dichloroethane,1,1-	0.1	1	0.5	5	NA	NA	NA
Dichloroethene, cis-1,2-	0.01	0.1	0.035	0.035	NA	NA	NA
Dichloroethene,1,1-	0.05	0.05	0.2	0.2	NA	NA	1.2
Tetrachloroethene	0.01	0.1	4.6	4.6	0.051	0.00001	0.035
Trans-1,2-Dichloroethene	0.02	0.2	0.07	0.7	NA	NA	NA
Trichloroethane,1,1,1-	0.09	0.9	5.2	5.2	NA	NA	NA
Trichloroethene	0.002	0.02	0.18	0.18	0.011	0.0000017	0.00595
Vinyl chloride	0.003	0.003	0.1	0.1	1.4	0.0000088	0.0308

General Notes:

1. Region 9 Preliminary Remediation Goals (http://www.epa.gov/region09/waste/sfund/prg/index.html).
2. IRIS (http://cfpub.epa.gov/ncea/iris/index.cfm), checked on April 8, 2008.
3. All other values obtained from MassDEP (2008b,c).
4. NA = Not Applicable/Not a classified carcinogen

Table RC-15
Exposure Point Concentrations (EPCs) on Tufts Street Area (Worst Case)
Tufts Street and MBTA Railroad Area Exposure Area
Somerville, Massachusetts

Sample Type:	Soil	Outdoor Air	Indoor Air	Indoor Air	Indoor Air
	Maximum 0-3'		Spatial and Temporal Average 9 Tufts Street (Right Unit)	Spatial and Temporal Average 17 Tufts Street	Spatial and Temporal Average 19 Tufts Street
Unit:	mg/kg	mg/m^3	mg/m^3	mg/m^3	mg/m^3
Analyte					
Volatile Organic Compounds (VOCs)					
Carbon tetrachloride	8.0E-02	**	**	**	**
Chloroethane	2.0E-01	**	**	**	**
Chloroform	NA	**	**	**	**
Dichloroethane,1,1-	8.5E-02	4.1E-04	4.1E-04	4.1E-04	4.1E-04
Dichloroethylene, cis-1,2-	8.5E-02	4.0E-04	4.0E-04	4.0E-04	4.0E-04
Dichloroethylene,1,1-	8.5E-02	4.0E-04	4.0E-04	4.0E-04	4.0E-04
Tetrachloroethylene (PCE)	9.9E-02	3.5E-03	4.2E-03	3.5E-03	4.2E-03
Trans-1,2-Dichloroethylene	8.0E-02	4.0E-04	4.0E-04	4.0E-04	4.0E-04
Trichloroethane,1,1,1- (TCA)	8.5E-02	7.4E-04	5.5E-04	5.5E-04	5.5E-04
Trichloroethylene (TCE)	8.0E-02	6.3E-04	5.5E-04	1.4E-03	1.7E-03
Vinyl chloride	8.0E-02	2.6E-04	2.6E-04	2.6E-04	2.6E-04

General Notes:

1. mg/kg = milligrams per kilogram.
2. mg/m^3 = milligrams per cubic meter.
3. NA = no data were available for this compound in this medium.
4. ** = compound is not a COPC for this medium.
5. For 0-3 foot soil EPCs, 23 Tufts Street is the location of the maximum concentration for PCE. Concentrations for all other COPCs are 1/2 the detection limit.
6. The indoor air EPC for PCE at 9 Tufts Street (Right Unit) is the temporal average of spatially averaged concentrations assuming 12 hours on the first floor and 12 hours in the basement. Concentrations for all other COPCs are 1/2 the detection limit.

7. The indoor air EPCs for PCE and TCE at 17 Tufts Street and 19 Tufts Street are the temporal averages of spatially averaged concentrations assuming 12 hours on the first floor and 12 hours in the basement. Concentrations for all other COPCs are 1/2 the detection limit.

Table RC-16
Exposure Point Concentrations (EPCs) on Other Streets Area (Worst Case)
Other Streets Area Exposure Area
Somerville, Massachusetts

Sample Type:	Soil	Outdoor Air	Indoor Air	Indoor Air
	Maximum 0-3'		Spatial Average and Temporal Maximum 95 Franklin Street	Spatial and Temporal Average 17 Knowlton Street
Unit:	mg/kg	mg/m^3	mg/m^3	mg/m^3
Analyte				
Volatile Organic Compounds (VOCs)				
Carbon tetrachloride	4.9E-02	**	**	**
Chloroethane	1.2E-01	**	**	**
Chloroform	4.9E-02	**	**	**
Dichloroethane,1,1-	1.3E-01	4.7E-04	4.1E-04	4.1E-04
Dichloroethylene, cis-1,2-	4.9E-02	4.6E-04	4.0E-04	4.0E-04
Dichloroethylene,1,1-	4.9E-02	4.6E-04	4.0E-04	4.0E-04
Tetrachloroethylene (PCE)	9.9E-01	8.2E-04	1.7E-03	1.1E-03
Trans-1,2-Dichloroethylene	4.9E-02	4.6E-04	4.0E-04	4.0E-04
Trichloroethane,1,1,1- (TCA)	7.7E-02	6.4E-04	5.5E-04	5.5E-04
Trichloroethylene (TCE)	3.6E-01	6.4E-04	5.5E-04	5.5E-04
Vinyl chloride	4.9E-02	3.0E-04	2.6E-04	2.6E-04

General Notes:

1. mg/kg = milligrams per kilogram.
2. mg/m^3 = milligrams per cubic meter.

3. ** = compound is not a COPC for this medium.
4. For 0-3 foot soil EPCs, MW101 is the location of the maximum concentration for PCE, TCE, and TCA. MW112A is the location of the maximum concentration for 1,1-dichloroethane. Concentrations for all other COPCs are 1/2 the detection limit.
5. The indoor air EPCs for PCE and/or TCE are the temporal averages or temporal maxima of spatially averaged concentrations assuming either 20 hours on the first floor and 4 hours in the basement (20/4) or 12 hours on the first floor and 12 hours in the basement (12/12), as follows: 95 Franklin - temporal maximum, post-EPEM modification, 20/4; 17 Knowlton, 10 Morton, 18 Morton - temporal average, post-EPEM, 20/4; 19-19A Morton - temporal average, post-EPEM, 12/12; 117 Washington - temporal maximum, no EPEM, 20/4. Concentrations for all other COPCs are 1/2 the detection limit.

Table RC-16
Exposure Point Concentrations (EPCs) on Other Streets Area (Worst Case)
Other Streets Area Exposure Area
Somerville, Massachusetts

Sample Type:	Indoor Air	Indoor Air	Indoor Air	Indoor Air
	Spatial and Temporal Average 10 Morton Street	Spatial and Temporal Average 18 Morton Street	Spatial and Temporal Average 19-19A Morton Street	Spatial Average and Temporal Maximum 117 Washington Street
Unit:	mg/m^3	mg/m^3	mg/m^3	mg/m^3
Analyte				
Volatile Organic Compounds (VOCs)				
Carbon tetrachloride	**	**	**	**
Chloroethane	**	**	**	**
Chloroform	**	**	**	**
Dichloroethane,1,1-	4.1E-04	4.1E-04	4.1E-04	4.1E-04
Dichloroethylene, cis-1,2-	4.0E-04	4.0E-04	4.0E-04	4.0E-04
Dichloroethylene,1,1-	4.0E-04	4.0E-04	4.0E-04	4.0E-04
Tetrachloroethylene (PCE)	7.0E-04	1.3E-03	1.7E-03	1.5E-03
Trans-1,2-Dichloroethylene	4.0E-04	4.0E-04	4.0E-04	4.0E-04
Trichloroethane,1,1,1- (TCA)	5.5E-04	5.5E-04	5.5E-04	5.5E-04
Trichloroethylene (TCE)	1.4E-03	7.1E-04	5.5E-04	5.5E-04
Vinyl chloride	2.6E-04	2.6E-04	2.6E-04	2.6E-04

General Notes:

1. mg/kg = milligrams per kilogram.
2. mg/m^3 = milligrams per cubic meter.

3. ** = compound is not a COPC for this medium.
4. For 0-3 foot soil EPCs, MW101 is the location of the maximum concentration for PCE, TCE, and TCA. MW112A is the location of the maximum concentration for 1,1-dichloroethane. Concentrations for all other COPCs are 1/2 the detection limit.

5. The indoor air EPCs for PCE and/or TCE are the temporal averages or temporal maxima of spatially averaged concentrations assuming either 20 hours on the first floor and 4 hours in the basement (20/4) or 12 hours on the first floor and 12 hours in the basement (12/12), as follows: 95 Franklin - temporal maximum, post-EPEM modification, 20/4; 17 Knowlton, 10 Morton, 18 Morton - temporal average, post-EPEM, 20/4; 19-19A Morton - temporal average, post-EPEM, 12/12; 117 Washington - temporal maximum, no EPEM, 20/4. Concentrations for all other COPCs are 1/2 the detection limit.

Table RC-17
Exposure Assumptions
50 Tufts Street, Somerville, MA
UniFirst Corporation

Medium	Route	Parameter	Units	Resident Infant	Resident Young Child	Resident Older Child	Resident Adult	Resident TWA Value	Source	Comment	Homebound Resident Value	Source	Comment
Soil	Incidental Ingestion & Dermal Contact	Soil Ingestion Rate	mg/d	NE	100	50	50		a		NE		
		Soil TWA Ingestion Rate	mg-y/kg-d					49	b		NE		
		Soil Dermal Contact Skin Exposed	cm^2/d	NE	2431	4427	5653		e	Median values for face, hands, forearms, lower legs, and feet of females	NE		
		Soil TWA Dermal Contact Skin Exposed	mg-cm^2-y/kg-d-cm^2					444	b		NE		
		Soil Dermal Contact Adherence Rate	mg/cm^2	NE	0.35	0.14	0.13	0.35	a		NE		
		Soil Exposure Frequency	d/y	NE	150	150	150	150	a		NE		
		Soil Exposure Period - Cancer	y	NE	7	6	0	13	a		NE		
		Soil Exposure Period - Non-Cancer	y	NE	7	7	16	7	a		NE		
		Soil Averaging Time - Cancer	d	NE	25550	25550	25550	25550	a		NE		
		Soil Averaging Time - Non-Cancer	d	NE	2555	2190	0	2555	a		NE		
Groundwater	Ingestion & Dermal Contact	Groundwater Ingestion Rate	L/d	NE	NE	NE	NE	NE			NE		
		Groundwater TWA Ingestion Rate	L-y/kg-d										
		Groundwater Exposure Frequency	d/y	NE	NE	NE	NE	NE			NE		
		Groundwater Exposure Period - Cancer	y	NE	NE	NE	NE	NE			NE		
		Groundwater Exposure Period - Non-Cancer	y	NE	NE	NE	NE	NE			NE		
		Groundwater Averaging Time - Cancer	d	NE	NE	NE	NE	NE			NE		
		Groundwater Averaging Time - Non-Cancer	d	NE	NE	NE	NE	NE			NE		
		Groundwater Dermal Contact Skin Exposed	cm^2	NE	NE	NE	NE	NE			NE		
		Groundwater TWA Dermal Contact Skin Exposed	cm^2-y/kg	NE	NE	NE	NE	NE			NE		
		Groundwater Dermal Contact Exposure Time	hr/d	NE	NE	NE	NE	NE			NE		
Outdoor Air	Inhalation of Volatiles	Outdoor Air Exposure Time - Volatiles	hr/d	NE	4	4	8	6	d	Takes into account indoor exposures	NE		
		Outdoor Air Exposure Frequency - Volatiles	d/y	NE	150	150	150	150	e		NE		
		Outdoor Air Exposure Period - Cancer - Volatiles	y	NE	7	6	0	13	a		NE		
		Outdoor Air Exposure Period - Non-Cancer - Volatiles	y	NE	7	7	16	7	a		NE		
		Outdoor Air Averaging Time - Cancer - Volatiles	d	NE	25550	25550	25550	25550	e		NE		
		Outdoor Air Averaging Time - Non-Cancer - Volatiles	d	NE	2555	2190	0	2555	e		NE		
Outdoor Air	Inhalation of Particulates	Outdoor Air Inhalation Rate - Particulates	m^3/hr	NE	0.36	0.7	1.2		c	Light exertion	NE		
		Outdoor Air TWA Inhalation Rate - Particulates	m^3-y/h-kg	NE				0.25	b		NE		
		Outdoor Air PM10 - Particulates	ug/m^3	NE	32	32	32	32	f		NE		
		Outdoor Air Exposure Time - Particulates	hr/d	NE	4	4	8	6	d	Takes into account indoor exposures	NE		
		Outdoor Air Exposure Frequency - Particulates	d/y	NE	150	150	150	150	e		NE		
		Outdoor Air Exposure Period - Cancer - Particulates	y	NE	7	6	0	13	e		NE		
		Outdoor Air Exposure Period - Non-Cancer - Particulates	y	NE	7	7	16	7	a		NE		
		Outdoor Air Averaging Time - Cancer - Particulates	d	NE	25550	25550	25550	25550	e		NE		
		Outdoor Air Averaging Time - Non-Cancer - Particulates	d	NE	2555	2190	0	2555	e		NE		
Indoor Air	Inhalation of Volatiles	Indoor Air Exposure Time	h/d	24	20 / 24	20 / 24	16 / 24		d	takes into account outdoor exposure 150d/y	24	d	100% indoors; No outdoor exposure
		Indoor Air Exposure Frequency	d/y	365	215 / 150	215 / 150	215 / 150		d	takes into account outdoor exposure 150d/y	365	d	
		Indoor Air Exposure Period - Cancer	y	1	7	5	0		a		13	e	
		Indoor Air Exposure Period - Non-Cancer	y	1	7	7	15		a		7	a	
		Indoor Air Averaging Time - Cancer	d	365	25550	25550	25550		a		25550	a	
		Indoor Air Averaging Time - Non-Cancer	d	365	2555	1825	0		e		2555	e	
General		Body Weight	kg		17	40	59		a				

NE - No exposure via this route
e - MADEP (2008). available from http://www.mass.gov/dep/service/compliance/riskasmt.htm
b - Time-weighted average calculated using the following formula:
c - MADEP (1995a). Appendices to the Guidance for Disposal Site Risk Characterization - In support of the Massachusetts Contingency Plan. Interim Final Policy. WSC/ORS-95-141. July, 1995.
d - Professional judgement
e - Value for soil exposure
f - MADEP (2007). Technical Update: Calculation of Risks due to Inhalation of Particulates by Construction Workers. Office of Research and Standards. Available from http://www.mass.gov/dep/service/compliance/riskasmt.htm Revised January 2007.
g - Value for construction worker

$$CR_{TWA} = \frac{CR_{YC} \times EP_{YC}}{BW_{YC}} + \frac{CR_{OC} \times EP_{OC}}{BW_{OC}} + \frac{CR_{A} \times EP_{A}}{BW_{A}}$$

where :
CR = Contact Rate
EP = Exposure Period
BW = Body Weight
TWA = Time - Weighted Average
YC = Young Child
OC = Older Child
A = Adult

Table RC-18
Relative Absorption Factors
50 Tufts Street
Somerville, Massachusetts

Compound	Relative Absorption Factor Soil Ingestion Non-Cancer Chronic	Relative Absorption Factor Soil Dermal Non-Cancer Chronic	Relative Absorption Factor Soil Ingestion Non-Cancer Subchronic	Relative Absorption Factor Soil Dermal Non-Cancer Subchronic	Relative Absorption Factor Soil Ingestion Cancer	Relative Absorption Factor Soil Dermal Cancer	Relative Absorption Factor Water Ingestion Non-Cancer Subchronic	Relative Absorption Factor Water Ingestion Non-Cancer Chronic	Relative Absorption Factor Water Ingestion Cancer	Relative Absorption Factor Water Dermal Cancer	Relative Absorption Factor Water Dermal Non-Cancer Chronic	Relative Absorption Factor Water Dermal Non-Cancer Subchronic	Relative Absorption Factor Air Inhalation Cancer	Relative Absorption Factor Air Inhalation Non-Cancer Chronic	Relative Absorption Factor Air Inhalation Non-Cancer Subchronic
Carbon tetrachloride	1	0.1	1	0.1	1	0.1	1	1	1	1	1	1	1	1	1
Chloroethane	1	0.1	1	0.1	NC	NC	1	1	NC	NC	1	1	NC	1	1
Chloroform	1	0.1	1	0.1	NA	NA	1	1	NC	NC	1	1	1	1	1
Dichloroethane,1,1-	1.3	0.13	1.3	0.13	NC	NC	1.3	1.3	NC	NC	1	1	NC	1	1
Dichloroethene, cis-1,2-	1	0.1	1	0.1	NC	NC	1	1	NC	NC	1	1	NC	1	1
Dichloroethene,1,1-	1	0.1	1	0.1	NC	NC	1	1	NC	NC	1	1	1	1	1
Tetrachloroethene	1	0.1	1	0.1	1	0.1	1	1	1	1	1	1	1	1	1
Trans-1,2-Dichloroethene	1	0.1	1	0.1	NC	NC	1	1	NC	NC	1	1	NC	1	1
Trichloroethane,1,1,1-	1	0.1	1	0.1	NC	NC	1	1	NC	NC	1	1	NC	1	1
Trichloroethene	1	0.1	1	0.1	1	0.1	1	1	1	1	1	1	1	1	1
Vinyl chloride	1	0.1	1	0.1	1.53	0.16	1	1	1.53	1	1	1	1	1	1

General Notes:
1. NC - Not calculated
2. Values obtained from MassDEP.

Table RC-19

Summary of Potential Risks at 9 Tufts Street (Right Unit)

9 Tufts Street (Right Unit)
Somerville, Massachusetts

Exposure Pathways	Non-Carcinogenic Risk	Carcinogenic Risk
Current Resident at 9 Tufts Street (Right Unit) (Outdoor)		
Soil ingestion and dermal	9E-04	1E-07
Soil particulate	4E-07	5E-11
Ambient Air (outdoor air)	2E-03	5E-07
Cumulative outdoor risks	3E-03	6E-07
Indoor/Outdoor Resident at 9 Tufts Street (Right Unit)		
Indoor Air	2E-02	8E-06
Homebound Resident at 9 Tufts Street (Right Unit)		
Indoor Air	3E-02	8E-06
Current Resident at 9 Tufts Street (Right Unit) (Cumulative)		
Cumulative Outdoor and Indoor Risks	3E-02	8E-06

Table RC-20

Summary of Potential Risks at 17 Tufts Street

17 Tufts Street

Somerville, Massachusetts

Exposure Pathways	Non-Carcinogenic Risk	Carcinogenic Risk
Current Resident at 17 Tufts Street (Outdoor)		
Soil ingestion and dermal	9E-04	1E-07
Soil particulate	4E-07	5E-11
Ambient Air (outdoor air)	2E-03	5E-07
Cumulative outdoor risks	3E-03	6E-07
Indoor/Outdoor Resident at 17 Tufts Street		
Indoor Air	3E-02	7E-06
Homebound Resident at 17 Tufts Street		
Indoor Air	3E-02	7E-06
Current Resident at 17 Tufts Street (Cumulative)		
Cumulative Outdoor and Indoor Risks	3E-02	7E-06

Table RC-21
Summary of Potential Risks at 19 Tufts Street
19 Tufts Street
Somerville, Massachusetts

Exposure Pathways	Non-Carcinogenic Risk	Carcinogenic Risk
Current Resident at 19 Tufts Street (Outdoor)		
Soil ingestion and dermal	9E-04	1E-07
Soil particulate	4E-07	5E-11
Ambient Air (outdoor air)	2E-03	5E-07
Cumulative outdoor risks	3E-03	6E-07
Indoor/Outdoor Resident at 19 Tufts Street		
Indoor Air	3E-02	8E-06
Homebound Resident at 19 Tufts Street		
Indoor Air	3E-02	9E-06
Current Resident at 19 Tufts Street (Cumulative)		
Cumulative Outdoor and Indoor Risks	3E-02	9E-06

Table RC-22

Summary of Potential Risks at 95 Franklin Street

95 Franklin Street

Somerville, Massachusetts

Exposure Pathways	Non-Carcinogenic Risk	Carcinogenic Risk
Current Resident at 95 Franklin Street (Outdoor)		
Soil ingestion and dermal	2E-03	9E-08
Soil particulate	6E-07	5E-11
Ambient Air (outdoor air)	2E-03	1E-07
Cumulative outdoor risks	4E-03	2E-07
Indoor/Outdoor Resident at 95 Franklin Street		
Indoor Air	2E-02	4E-06
Homebound Resident at 95 Franklin Street		
Indoor Air	3E-02	4E-06
Current Resident at 95 Franklin Street (Cumulative)		
Cumulative Outdoor and Indoor Risks	3E-02	4E-06

Table RC-23

Summary of Potential Risks at 17 Knowlton Street

17 Knowlton Street
Somerville, Massachusetts

Exposure Pathways	Non-Carcinogenic Risk	Carcinogenic Risk
Current Resident at 17 Knowlton Street (Outdoor)		
Soil ingestion and dermal	2E-03	9E-08
Soil particulate	6E-07	5E-11
Ambient Air (outdoor air)	2E-03	1E-07
Cumulative outdoor risks	4E-03	2E-07
Indoor/Outdoor Resident at 17 Knowlton Street		
Indoor Air	2E-02	2E-06
Homebound Resident at 17 Knowlton Street		
Indoor Air	3E-02	3E-06
Current Resident at 17 Knowlton Street (Cumulative)		
Cumulative Outdoor and Indoor Risks	3E-02	3E-06

Table RC-24

Summary of Potential Risks at 10 Morton Street

10 Morton Street

Somerville, Massachusetts

Exposure Pathways	Non-Carcinogenic Risk	Carcinogenic Risk
Current Resident at 10 Morton Street (Outdoor)		
Soil ingestion and dermal	2E-03	9E-08
Soil particulate	6E-07	5E-11
Ambient Air (outdoor air)	2E-03	1E-07
Cumulative outdoor risks	4E-03	2E-07
Indoor/Outdoor Resident at 10 Morton Street		
Indoor Air	3E-02	2E-06
Homebound Resident at 10 Morton Street		
Indoor Air	3E-02	2E-06
Current Resident at 10 Morton Street (Cumulative)		
Cumulative Outdoor and Indoor Risks	3E-02	2E-06

Table RC-25

Summary of Potential Risks at 18 Morton Street

18 Morton Street

Somerville, Massachusetts

Exposure Pathways	Non-Carcinogenic Risk	Carcinogenic Risk
Current Resident at 18 Morton Street (Outdoor)		
Soil ingestion and dermal	2E-03	9E-08
Soil particulate	6E-07	5E-11
Ambient Air (outdoor air)	2E-03	1E-07
Cumulative outdoor risks	4E-03	2E-07
Indoor/Outdoor Resident at 18 Morton Street		
Indoor Air	2E-02	3E-06
Homebound Resident at 18 Morton Street		
Indoor Air	3E-02	3E-06
Current Resident at 18 Morton Street (Cumulative)		
Cumulative Outdoor and Indoor Risks	3E-02	3E-06

Table RC-26

Summary of Potential Risks at 19-19A Morton Street

19-19A Morton Street
Somerville, Massachusetts

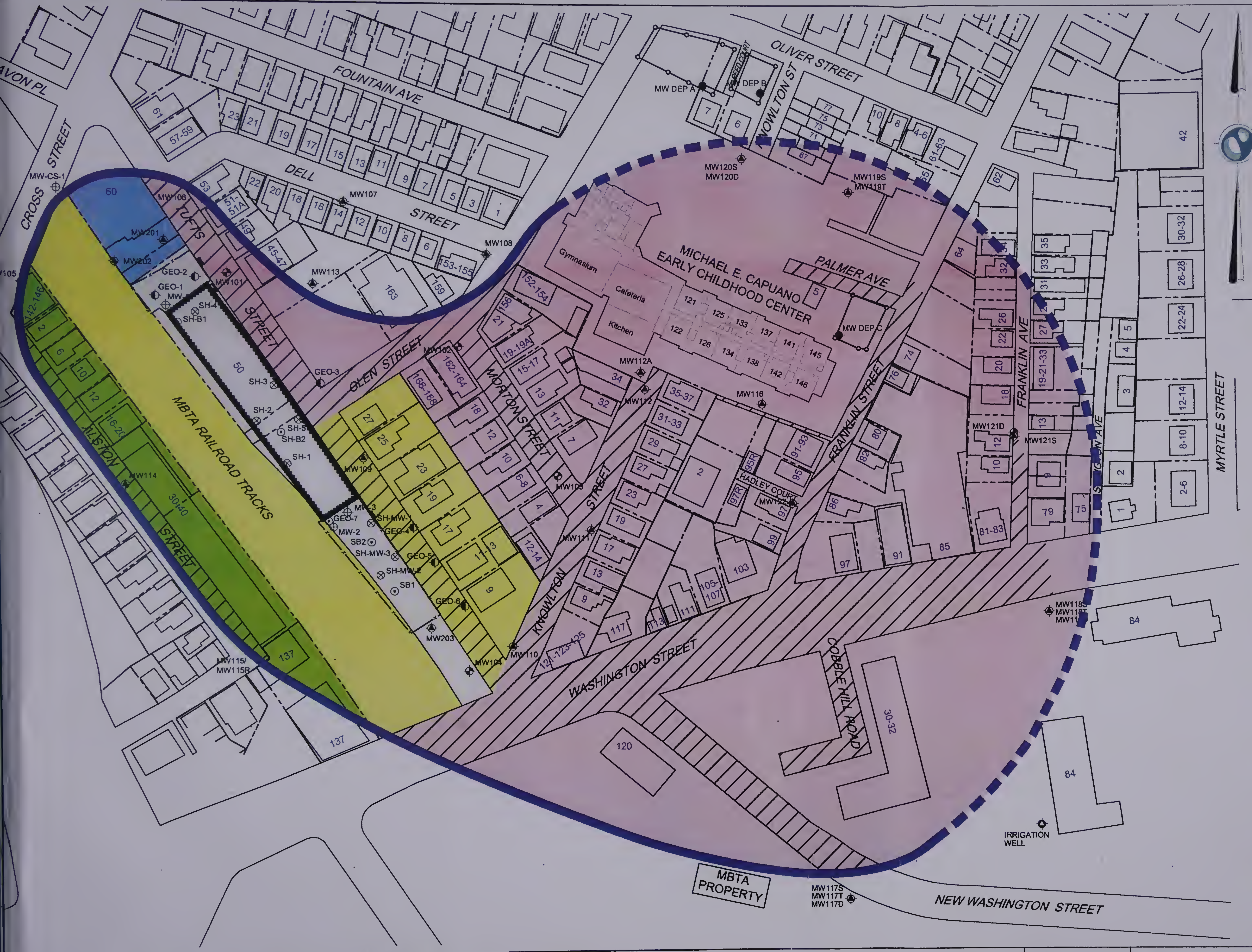
Exposure Pathways	Non-Carcinogenic Risk	Carcinogenic Risk
Current Resident at 19-19A Morton Street (Outdoor)		
Soil ingestion and dermal	2E-03	9E-08
Soil particulate	6E-07	5E-11
Ambient Air (outdoor air)	2E-03	1E-07
Cumulative outdoor risks	4E-03	2E-07
Indoor/Outdoor Resident at 19-19A Morton Street		
Indoor Air	2E-02	4E-06
Homebound Resident at 19-19A Morton Street		
Indoor Air	3E-02	4E-06
Current Resident at 19-19A Morton Street (Cumulative)		
Cumulative Outdoor and Indoor Risks	3E-02	4E-06

Table RC-27

Summary of Potential Risks at 117 Washington Street

117 Washington Street
Somerville, Massachusetts

Exposure Pathways	Non-Carcinogenic Risk	Carcinogenic Risk
Current Resident at 117 Washington Street (Outdoor)		
Soil ingestion and dermal	2E-03	9E-08
Soil particulate	6E-07	5E-11
Ambient Air (outdoor air)	2E-03	1E-07
Cumulative outdoor risks	4E-03	2E-07
Indoor/Outdoor Resident at 117 Washington Street		
Indoor Air	2E-02	3E-06
Homebound Resident at 117 Washington Street		
Indoor Air	3E-02	3E-06
Current Resident at 117 Washington Street (Cumulative)		
Cumulative Outdoor and Indoor Risks	3E-02	3E-06



LEGEND:

- ⊕ MONITORING WELL WITH SOIL VAPOR SAMPLE PORT INSTALLED BY GEI, JANUARY 2007 - JANUARY 2008
- ⊗ MONITORING WELL INSTALLED BY SANBORN HEAD ASSOCIATES, 2002
- ◐ MONITORING WELL INSTALLED BY GEOINSIGHT, JUNE 2004
- ⊙ SOIL BORING ADVANCED BY GEOINSIGHT, AUGUST 2004
- ⊕ MONITORING WELL INSTALLED BY GEI, MAY 2006
- ● DRIVEN POINT MONITORING WELL INSTALLED BY MADEP, MAY 2007
- ⊕ MONITORING WELL INSTALLED PREVIOUSLY, DATE UNKNOWN
- ⊕ PREVIOUSLY INSTALLED IRRIGATION WELL
- —x—x— CHAIN LINK FENCE
- 138 ROOM NUMBER AT CAPUANO SCHOOL
- ◇ BOUNDARY OF COMMUNITY GARDENS
- 84 STREET ADDRESS

MBTA = MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

- ▬ DISPOSAL SITE BOUNDARY (DASHED WHERE INFERRED)
- ▨ NEIGHBORHOOD STREETS EXPOSURE AREA
- ☐ THE PROPERTY EXPOSURE AREA
- 🟩 ALSTON STREET EXPOSURE AREA
- 🟨 TUFTS STREET AREA AND RAILROAD EXPOSURE AREA
- 🟦 60 TUFTS STREET EXPOSURE AREA
- 🟪 OTHER STREETS EXPOSURE AREA

NOTE: BASE PLAN COMPILED FROM PHASE II COMPREHENSIVE SITE ASSESSMENT BY GEI CONSULTANTS TITLED "DISPOSAL SITE MAP AND SITE BOUNDARY," FIG. 1-2.

CLIENT LOGO

CLIENT:
UNIFIRST CORPORATION
WILMINGTON, MASSACHUSETTS

DRAWN BY: R. BOWMAN
CHECKED BY: D. PFEIFFER
DATUM: NAD 83
PROJECTION: N/A
SCALE: AS SHOWN

PROJECT
50 TUFTS STREET
SOMERVILLE, MASSACHUSETTS

TITLE
EXPOSURE AREAS

DATE: 19 MAY 2009
PROJECT NO: 7-6540-0000
REV. NO.: A
FIGURE No. RC-1

Appendix **A**

Risk Equations and Calculations

Table A-1
Exposure and Risk Estimates Associated With Soil Contact
50 Tufts Street, Somerville MA
UniFirst
Current Resident along Tufts St.
Soil

Receptor: Resident
Medium: Soil
Exposure Area: Current
Depth: 0-3 feet
Duration: Chronic

Parameter	Definition	Units	Value	Comment
IRsoil	Soil Ingestion Rate	mg/d	100	
IRsoilTWA	Soil TWA Ingestion Rate	mg-y/kg-d	49	
SA	Soil Dermal Contact Skin Exposed	cm2/d	2431	
SATWA	Soil TWA Dermal Contact Skin Exposed	mg-cm2-y/kg-d-c	444	
AF	Soil Dermal Contact Adherence Rate	mg/cm2	0.35	
EF	Soil Exposure Frequency	d/y	150	
EPc	Soil Exposure Period - Cancer	y	13	
EPnc	Soil Exposure Period - Non-Cancer	y	7	
ATc	Soil Averaging Time - Cancer	d	25550	
ATn	Soil Averaging Time - Non-Cancer	d	2555	
BW	Body Weight	kg	17	
CF	Conversion Factor	kg/mg	0.000001	

$$ADD_{ing} = \frac{C_{soil} \times CF \times IR_{soil} \times RAF_{os} \times EF \times EP}{AP \times BW}$$

$$ADD_{der-nc} = \frac{C_{soil} \times CF \times SA \times AF \times RAF_{ds} \times EF \times EP}{AP \times BW}$$

$$ADD_{ing-c} = \frac{C_{soil} \times CF \times IR_{soil} TWA \times RAF_{os} \times EF}{AP}$$

$$ADD_{der-c} = \frac{C_{soil} \times CF \times SATWA \times RAF_{ds} \times EF}{AP}$$

$$HI_{ing} = \frac{ADD_{ing-nc}}{RfD}$$

$$HI_{der} = \frac{ADD_{der-nc}}{RfD}$$

$$HI = HI_{ing} + HI_{der}$$

$$Risk_{ing} = ADD_{ing-c} \times CS$$

$$Risk_{der} = ADD_{der-c} \times CSF$$

$$Risk = Risk_{ing} + Risk_{der}$$

	EPC			Incidental Ingestion						Dermal Contact						Total	
Compound	Soil (mg/kg)	RfD (mg/kg-d)	CSF 1/(mg/kg-d)	RAFosc	ADDing-c mg/kg-d	Risking	RAFosnc	ADDing-nc mg/kg-d	HIing	RAFdsc	ADDder-c mg/kg-d	Riskder	RAFdsnc	ADDder-nc mg/kg-d	HIder	Risk (Soil) YC-OC-A	HI (Soil) YC
Carbon tetrachloride	8.0E-02	0.0007	0.13	1	2E-08	3E-09	1	2E-07	3E-04	0.1	2E-08	3E-09	0.1	2E-07	2E-04	6E-09	5E-04
Chloroethane	2.0E-01	0.4	NA	NC	NA	NA	1	5E-07	1E-06	NC	NA	NA	0.1	4E-07	1E-06	NA	2E-06
Chloroform	NA	0.01	NA	NA	NA	NA	1	NA	NA	NA	NA	NA	0.1	NA	NA	NA	NA
Dichloroethane,1,1-	8.5E-02	0.1	NA	NC	NA	NA	1.3	3E-07	3E-06	NC	NA	NA	0.13	2E-07	2E-06	NA	5E-06
Dichloroethene, cis-1,2-	8.5E-02	0.01	NA	NC	NA	NA	1	2E-07	2E-05	NC	NA	NA	0.1	2E-07	2E-05	NA	4E-05
Dichloroethene,1,1-	8.5E-02	0.05	NA	NC	NA	NA	1	2E-07	4E-06	NC	NA	NA	0.1	2E-07	3E-06	NA	8E-06
Tetrachloroethene	9.9E-02	0.01	0.051	1	3E-08	1E-09	1	2E-07	2E-05	0.1	3E-08	1E-09	0.1	2E-07	2E-05	3E-09	4E-05
Trans-1,2-Dichloroethene	8.0E-02	0.02	NA	NC	NA	NA	1	2E-07	1E-05	NC	NA	NA	0.1	2E-07	8E-06	NA	2E-05
Trichloroethane,1,1,1-	8.5E-02	0.09	NA	NC	NA	NA	1	2E-07	2E-06	NC	NA	NA	0.1	2E-07	2E-06	NA	4E-06
Trichloroethene	8.0E-02	0.002	0.011	1	2E-08	3E-10	1	2E-07	1E-04	0.1	2E-08	2E-10	0.1	2E-07	8E-05	5E-10	2E-04
Vinyl chloride	8.0E-02	0.003	1.4	1.53	3E-08	5E-08	1	2E-07	6E-05	0.16	3E-08	5E-08	0.1	2E-07	5E-05	1E-07	1E-04
Total						5E-08			5E-04			5E-08			4E-04	1E-07	9E-04

NA - Not available
NC - Not calculated
ND - Not detected

Table A-2
Exposure and Risk Estimates Associated With Soil Contact
50 Tufts Street, Somerville MA
UniFirst
Current Resident at other streets
Soil

Receptor:	Resident ▼
Medium:	Soil ▼
Exposure Area:	Current ▼
Depth:	0-3 feet ▼
Duration:	Chronic ▼

Parameter	Definition	Units	Value	Comment
IRsoil	Soil Ingestion Rate	mg/d	100	
IRsoilTWA	Soil TWA Ingestion Rate	mg-y/kg-d	49	
SA	Soil Dermal Contact Skin Exposed	cm2/d	2431	
SATWA	Soil TWA Dermal Contact Skin Exposed	mg-cm2-y/kg-d-c	444	
AF	Soil Dermal Contact Adherence Rate	mg/cm2	0.35	
EF	Soil Exposure Frequency	d/y	150	
EPc	Soil Exposure Period - Cancer	y	13	
EPnc	Soil Exposure Period - Non-Cancer	y	7	
ATc	Soil Averaging Time - Cancer	d	25550	
ATn	Soil Averaging Time - Non-Cancer	d	2555	
BW	Body Weight	kg	17	
CF	Conversion Factor	kg/mg	0.000001	

$$ADD_{ing} = \frac{C_{soil} \times CF \times IR_{soil} \times RAF_{os} \times EF \times EP}{AP \times BW}$$

$$ADD_{der-nc} = \frac{C_{soil} \times CF \times SA \times AF \times RAF_{ds} \times EF \times EP}{AP \times BW}$$

$$ADD_{ing-c} = \frac{C_{soil} \times CF \times IR_{soil}TWA \times RAF_{os} \times EF}{AP}$$

$$ADD_{der-c} = \frac{C_{soil} \times CF \times SATWA \times RAF_{ds} \times EF}{AP}$$

$$HI_{ing} = \frac{ADD_{ing-nc}}{RfD}$$

$$HI_{der} = \frac{ADD_{der-nc}}{RfD}$$

$$HI = HI_{ing} + HI_{der}$$

$$Risk_{ing} = ADD_{ing-c} \times CS$$

$$Risk_{der} = ADD_{der-c} \times CSF$$

$$Risk = Risk_{ing} + Risk_{der}$$

Compound	EPC Soil (mg/kg)	RfD (mg/kg-d)	CSF 1/(mg/kg-d)	Incidental Ingestion RAFosc	ADDing-c mg/kg-d	Risking	RAFosnc	ADDing-nc mg/kg-d	HIing	Dermal Contact RAFdsc	ADDder-c mg/kg-d	Riskder	RAFdsnc	ADDder-nc mg/kg-d	HIder	Total Risk (Soil) YC-OC-A	HI (Soil) YC
Carbon tetrachloride	4.9E-02	0.0007	0.13	1	1E-08	2E-09	1	1E-07	2E-04	0.1	1E-08	2E-09	0.1	1E-07	1E-04	3E-09	3E-04
Chloroethane	1.2E-01	0.4	NA	NC	NA	NA	1	3E-07	7E-07	NC	NA	NA	0.1	2E-07	6E-07	NA	1E-06
Chloroform	4.9E-02	0.01	NA	NA	NA	NA	1	1E-07	1E-05	NA	NA	NA	0.1	1E-07	1E-05	NA	2E-05
Dichloroethane,1,1-	1.3E-01	0.1	NA	NC	NA	NA	1.3	4E-07	4E-06	NC	NA	NA	0.13	3E-07	3E-06	NA	8E-06
Dichloroethene, cis-1,2-	4.9E-02	0.01	NA	NC	NA	NA	1	1E-07	1E-05	NC	NA	NA	0.1	1E-07	1E-05	NA	2E-05
Dichloroethene,1,1-	4.9E-02	0.05	NA	NC	NA	NA	1	1E-07	2E-06	NC	NA	NA	0.1	1E-07	2E-06	NA	4E-06
Tetrachloroethene	9.9E-01	0.01	0.051	1	3E-07	1E-08	1	2E-06	2E-04	0.1	3E-07	1E-08	0.1	2E-06	2E-04	3E-08	4E-04
Trans-1,2-Dichloroethene	4.9E-02	0.02	NA	NC	NA	NA	1	1E-07	6E-06	NC	NA	NA	0.1	1E-07	5E-06	NA	1E-05
Trichloroethane,1,1,1-	7.7E-02	0.09	NA	NC	NA	NA	1	2E-07	2E-06	NC	NA	NA	0.1	2E-07	2E-06	NA	4E-06
Trichloroethene	3.6E-01	0.002	0.011	1	1E-07	1E-09	1	9E-07	4E-04	0.1	9E-08	1E-09	0.1	7E-07	4E-04	2E-09	8E-04
Vinyl chloride	4.9E-02	0.003	1.4	1.53	2E-08	3E-08	1	1E-07	4E-05	0.16	2E-08	3E-08	0.1	1E-07	3E-05	6E-08	7E-05
Total						5E-08			9E-04			4E-08			8E-04	9E-08	2E-03

NA - Not available
NC - Not calculated
ND - Not detected

Table A-3
Exposure and Risk Estimates Associated With Inhalation of Soil-Derived Particulates in Air
50 Tufts Street, Somerville MA
UniFirst
Current Resident along Tufts St.
Ambient Air

Receptor:	Resident ▼
Medium of Origin:	Soil ▼
Exposure Medium:	Ambient Air ▼
Exposure Area	Current ▼
Depth	0-3 feet ▼
Duration	Chronic ▼

Parameter	Definition	Units	Value	Comment
IRair	Outdoor Air Inhalation Rate - Particulates	m3/hr	0.4	
IRairTWA	Outdoor Air TWA Inhalation Rate - Particulates	m3-y/h-kg	0.25	
PEF	Outdoor Air PM10 - Particulates	ug/m3	32	
ET	Outdoor Air Exposure Time - Particulates	hr/d	8	
EF	Outdoor Air Exposure Frequency - Particulates	d/y	150	
EP	Outdoor Air Exposure Period - Cancer - Particulates	y	13	
EP	Outdoor Air Exposure Period - Non-Cancer - Particulates	y	7	
ATc	Outdoor Air Averaging Time - Cancer - Particulates	d	25550	
ATn	Outdoor Air Averaging Time - Non-Cancer - Particulates	d	2555	
BW	Body Weight	kg	17	
C	Conversion Factor	ug/mg	1000	

$$C_{air} = C_{soil} \times PM_{10}$$

$$ADD_{inh-gi-c} = \frac{C_{air} \times 1.5 \times IR_{air} \times RAF_{ic} \times ET \times EF \times EP \times C}{AP \times BW}$$

$$ADD_{inh-gi-nc} = \frac{C_{air} \times 1.5 \times IR_{air} TWA \times RAF_{inc} \times ET \times EF \times C}{AP}$$

$$ADD_{inh-c} = \frac{C_{air} \times 0.5 \times IR_{air} \times RAF_{ic} \times ET \times EF \times EP \times C}{AP \times BW}$$

$$ADD_{inh-nc} = \frac{C_{air} \times 0.5 \times IR_{air} TWA \times RAF_{inc} \times ET \times EF \times C}{AP}$$

$$ADE_{inh} = \frac{ADD_{inh} \times 70kg}{20m^3 / d}$$

$$HI = \frac{ADD_{inh-gi-nc}}{RfD} + \frac{ADE_{inh-nc}}{RfC}$$

$$Risk = \left(ADD_{inh-gi-c} \times CSF\right) + \left(ADE_{inh-c} \times URF \times C\right)$$

Compound	EPC Soil (mg/kg)	EPC Fugitive Dust (mg/m3)	RfC (mg/m3)	URF 1/(ug/m3)	RfD (mg/kg-d)	CSF 1/(mg/kg-d)	RAFic	ADD-inhc mg/kg-d	ADE-c mg/m3	Riskinh	ADD-ingc	Risking	RAFinc	ADD-inhnc mg/kg-d	ADE-nc mg/m3	HIinh	ADD-ingnc	HIing	Risk (Particulates in Air) YC-OC-A	HI (Particulates in Air) YC
Carbon tetrachloride	8.0E-02	2.6E-09	0.43	0.000015	0.0007	0.13	1	2E-11	5E-11	8E-13	6E-11	8E-12	1	9E-11	3E-10	7E-10	3E-10	4E-07	9E-12	4E-07
Chloroethane	2.0E-01	6.4E-09	10	NA	0.4	NA	NC	NA	NA	NA	NA	NA	1	2E-10	8E-10	8E-11	7E-10	2E-09	NA	2E-09
Chloroform	NA	NA	0.66	0.000023	0.01	NA	1	NA	NA	NA	NA	NA	1	NA	NA	NA	NA	NA	NA	NA
Dichloroethane,1,1-	8.5E-02	2.7E-09	0.5	NA	0.1	NA	NC	NA	NA	NA	NA	NA	1	9E-11	3E-10	7E-10	3E-10	3E-09	NA	4E-09
Dichloroethene, cis-1,2-	8.5E-02	2.7E-09	0.035	NA	0.01	NA	NC	NA	NA	NA	NA	NA	1	9E-11	3E-10	9E-09	3E-10	3E-08	NA	4E-08
Dichloroethene,1,1-	8.5E-02	2.7E-09	0.2	NA	0.05	NA	1	NA	NA	NA	NA	NA	1	9E-11	3E-10	2E-09	3E-10	6E-09	NA	7E-09
Tetrachloroethene	9.9E-02	3.2E-09	4.6	0.00001	0.01	0.051	1	2E-11	7E-11	7E-13	8E-11	4E-12	1	1E-10	4E-10	8E-11	3E-10	3E-08	5E-12	3E-08
Trans-1,2-Dichloroethene	8.0E-02	2.6E-09	0.07	NA	0.02	NA	NC	NA	NA	NA	NA	NA	1	9E-11	3E-10	4E-09	3E-10	1E-08	NA	2E-08
Trichloroethane,1,1,1-	8.5E-02	2.7E-09	5.2	NA	0.09	NA	NC	NA	NA	NA	NA	NA	1	9E-11	3E-10	6E-11	3E-10	3E-09	NA	3E-09
Trichloroethene	8.0E-02	2.6E-09	0.18	0.0000017	0.002	0.011	1	2E-11	5E-11	9E-14	6E-11	7E-13	1	9E-11	3E-10	2E-09	3E-10	1E-07	8E-13	1E-07
Vinyl chloride	8.0E-02	2.6E-09	0.1	0.0000088	0.003	1.4	1	2E-11	5E-11	5E-13	6E-11	9E-11	1	9E-11	3E-10	3E-09	3E-10	9E-08	9E-11	9E-08
Total										2E-12		1E-10				2E-08		7E-07	1E-10	7E-07

NA - Not available
NC - Not calculated
ND - Not detected

Table A-4
Exposure and Risk Estimates Associated With Inhalation of Soil-Derives Particulates in Air
50 Tufts Street, Somerville MA
UniFirst
Current Resident at other streets
Ambient Air

Receptor:	Resident
Medium of Origin.	Soil
Exposure Medium:	Ambient Air
Exposure Area.	Current
Depth.	0-3 feet
Duration.	Chronic

Parameter	Definition	Units	Value	Comment
IRair	Outdoor Air Inhalation Rate - Particulates	m3/hr	0.4	
IRairTWA	Outdoor Air TWA Inhalation Rate - Particulates	m3-y/h-kg	0.25	
PEF	Outdoor Air PM10 - Particulates	ug/m3	32	
ET	Outdoor Air Exposure Time - Particulates	hr/d	8	
EF	Outdoor Air Exposure Frequency - Particulates	d/y	150	
EP	Outdoor Air Exposure Period - Cancer - Particulates	y	13	
EP	Outdoor Air Exposure Period - Non-Cancer - Particulates	y	7	
ATc	Outdoor Air Averaging Time - Cancer - Particulates	d	25550	
ATn	Outdoor Air Averaging Time - Non-Cancer - Particulates	d	2555	
BW	Body Weight	kg	17	
C	Conversion Factor	ug/mg	1000	

$$C_{air} = C_{soil} \times PM_{10}$$

$$ADD_{inh-gi-c} = \frac{C_{air} \times 1.5 \times IR_{air} \times RAF_{ic} \times ET \times EF \times EP \times C}{AP \times BW}$$

$$ADD_{inh-gi-nc} = \frac{C_{air} \times 1.5 \times IR_{air} TWA \times RAF_{inc} \times ET \times EF \times C}{AP}$$

$$ADD_{inh-c} = \frac{C_{air} \times 0.5 \times IR_{air} \times RAF_{ic} \times ET \times EF \times EP \times C}{AP \times BW}$$

$$ADD_{inh-nc} = \frac{C_{air} \times 0.5 \times IR_{air} TWA \times RAF_{inc} \times ET \times EF \times C}{AP}$$

$$ADE_{inh} = \frac{ADD_{inh} \times 70kg}{20m^3 / d}$$

$$HI = \frac{ADD_{inh-gi-nc}}{RfD} + \frac{ADE_{inh-nc}}{RfC}$$

$$Risk = \left(ADD_{inh-gi-c} \times CSF\right) + \left(ADE_{inh-c} \times URF \times C\right)$$

Compound	EPC Soil (mg/kg)	EPC Fugitive Dust (mg/m3)	RfC (mg/m3)	URF 1/(ug/m3)	RfD (mg/kg-d)	CSF 1/(mg/kg-d)	RAFic	ADD-inhc mg/kg-d	ADE-c mg/m3	Riskinh	ADD-ingc	Risking	RAFinc	ADD-inhnc mg/kg-d	ADE-nc mg/m3	HIinh	ADD-ingnc	HIing	Risk (Particulates in Air) YC-OC-A	HI (Particulates in Air) YC
Carbon tetrachloride	4.9E-02	1.6E-09	0.43	0.000015	0.0007	0.13	1	9E-12	3E-11	5E-13	4E-11	5E-12	1	5E-11	2E-10	4E-10	2E-10	2E-07	5E-12	2E-07
Chloroethane	1.2E-01	3.8E-09	10	NA	0.4	NA	NC	NA	NA	NA	NA	NA	1	1E-10	5E-10	5E-11	4E-10	1E-09	NA	1E-09
Chloroform	4.9E-02	1.6E-09	0.66	0.000023	0.01	NA	1	9E-12	3E-11	7E-13	NA	NA	1	5E-11	2E-10	3E-10	2E-10	2E-08	7E-13	2E-08
Dichloroethane,1,1-	1.3E-01	4.2E-09	0.5	NA	0.1	NA	NC	NA	NA	NA	NA	NA	1	1E-10	5E-10	1E-09	4E-10	4E-09	NA	5E-09
Dichloroethene, cis-1,2-	4.9E-02	1.6E-09	0.035	NA	0.01	NA	NC	NA	NA	NA	NA	NA	1	5E-11	2E-10	5E-09	2E-10	2E-08	NA	2E-08
Dichloroethene,1,1-	4.9E-02	1.6E-09	0.2	NA	0.05	NA	1	NA	NA	NA	NA	NA	1	5E-11	2E-10	9E-10	2E-10	3E-09	NA	4E-09
Tetrachloroethene	9.9E-01	3.2E-08	4.6	0.00001	0.01	0.051	1	2E-10	7E-10	7E-12	8E-10	4E-11	1	1E-09	4E-09	8E-10	3E-09	3E-07	5E-11	3E-07
Trans-1,2-Dichloroethene	4.9E-02	1.6E-09	0.07	NA	0.02	NA	NC	NA	NA	NA	NA	NA	1	5E-11	2E-10	3E-09	2E-10	8E-09	NA	1E-08
Trichloroethane,1,1,1-	7.7E-02	2.5E-09	5.2	NA	0.09	NA	NC	NA	NA	NA	NA	NA	1	9E-11	3E-10	6E-11	3E-10	3E-09	NA	3E-09
Trichloroethene	3.6E-01	1.1E-08	0.18	0.0000017	0.002	0.011	1	7E-11	2E-10	4E-13	3E-10	3E-12	1	4E-10	1E-09	8E-09	1E-09	6E-07	3E-12	6E-07
Vinyl chloride	4.9E-02	1.6E-09	0.1	0.0000088	0.003	1.4	1	9E-12	3E-11	3E-13	4E-11	5E-11	1	5E-11	2E-10	2E-09	2E-10	5E-08	5E-11	6E-08
Total										9E-12		1E-10				2E-08		1E-06	1E-10	1E-06

NA - Not available
NC - Not calculated
ND - Not detected

Table A-5
Exposure and Risk Estimates Associated With Inhalation of Volatile Compounds in Air
50 Tufts Street, Somerville MA
UniFirst
Current Resident along Tufts St.
Ambient Air

Receptor:	Resident ▼
Medium of Origin:	Soil Gas ▼
Exposure Medium:	Ambient Air ▼
Exposure Area:	Current ▼
Depth:	Shallow ▼
Duration:	Chronic ▼

$$C_{air} = \frac{C_{source} \times VF}{SDF}$$

$$ADE_{inh} = \frac{C_{air} \times RAF_i \times ET \times EF \times EP}{24hr / d \times 365 d / y \times AT}$$

$$HI_{inh} = \frac{ADE_{inh}}{RfC}$$

$$Risk = ADE_{inh} \times URF \times C$$

Parameter	Definition	Units	Value	Comment
ET	Outdoor Air Exposure Time - Volatiles	hr/d	8	
EF	Outdoor Air Exposure Frequency - Volatiles	d/y	150	
EP	Outdoor Air Exposure Period - Non-Cancer - Volatiles	y	7	
EP	Outdoor Air Exposure Period - Cancer - Volatiles	y	13	
ATc	Outdoor Air Averaging Time - Cancer - Volatiles	d	25550	
ATn	Outdoor Air Averaging Time - Non-Cancer - Volatiles	d	2555	
C	Conversion Factor	ug/mg	1000	

Compound	Outdoor Air Ambient Air (mg/m3)	RfC (mg/m3)	URF 1/(ug/m3)	RAFic	ADE-c mg/m3	Riskinh	RAFinc	ADE-nc mg/m3	HIinh	Risk (Ambient Air)	HI (Ambient Air)
Carbon tetrachloride	NA	0.43	0.000015	1	NA	NA	1	NA	NA	NA	NA
Chloroethane	NA	10	NA	NC	NA	NA	1	NA	NA	NA	NA
Chloroform	NA	0.66	0.000023	1	NA	NA	1	NA	NA	NA	NA
Dichloroethane,1,1-	4.1E-04	0.5	NA	NC	NA	NA	1	6E-05	1E-04	NA	1E-04
Dichloroethene, cis-1,2-	4.0E-04	0.035	NA	NC	NA	NA	1	5E-05	2E-03	NA	2E-03
Dichloroethene,1,1-	4.0E-04	0.2	NA	1	NA	NA	1	5E-05	3E-04	NA	3E-04
Tetrachloroethene	3.5E-03	4.6	0.00001	1	9E-05	9E-07	1	5E-04	1E-04	9E-07	1E-04
Trans-1,2-Dichloroethene	4.0E-04	0.07	NA	NC	NA	NA	1	5E-05	8E-04	NA	8E-04
Trichloroethane,1,1,1-	7.4E-04	5.2	NA	NC	NA	NA	1	1E-04	2E-05	NA	2E-05
Trichloroethene	6.3E-04	0.18	0.0000017	1	2E-05	3E-08	1	9E-05	5E-04	3E-08	5E-04
Vinyl chloride	2.6E-04	0.1	0.0000088	1	6E-06	6E-08	1	3E-05	3E-04	6E-08	3E-04
Total						1E-06			4E-03	1E-06	4E-03

NA - Not available
NC - Not calculated
ND - Not detected

Table A-6
Exposure and Risk Estimates Associated With Inhalation of Volatile Compounds in Air
50 Tufts Street, Somerville MA
UniFirst
Current Resident at other streets
Ambient Air

Receptor:	Resident ▼
Medium of Origin:	Ambient Air ▼
Exposure Medium:	Ambient Air ▼
Exposure Area:	Current ▼
Depth:	Shallow ▼
Duration:	Chronic ▼

$$C_{air} = \frac{C_{source} \times VF}{SDF}$$

$$ADE_{inh} = \frac{C_{air} \times RAF_i \times ET \times EF \times EP}{24hr / d \times 365 d / y \times AT}$$

$$HI_{inh} = \frac{ADE_{inh}}{RfC}$$

$$Risk = ADE_{inh} \times URF \times C$$

Parameter	Definition	Units	Value	Comment
ET	Outdoor Air Exposure Time - Volatiles	hr/d	8	
EF	Outdoor Air Exposure Frequency - Volatiles	d/y	150	
EP	Outdoor Air Exposure Period - Non-Cancer - Volatiles	y	7	
EP	Outdoor Air Exposure Period - Cancer - Volatiles	y	13	
ATc	Outdoor Air Averaging Time - Cancer - Volatiles	d	25550	
ATn	Outdoor Air Averaging Time - Non-Cancer - Volatiles	d	2555	
C	Conversion Factor	ug/mg	1000	

Compound	Outdoor Air Data Ambient Air (mg/m3)	RfC (mg/m3)	URF 1/(ug/m3)	RAFic	ADE-c mg/m3	Riskinh	RAFinc	ADE-nc mg/m3	HIinh	Risk (Ambient Air)	HI (Ambient Air)
Carbon tetrachloride	NA	0.43	0.000015	1	NA	NA	1	NA	NA	NA	NA
Chloroethane	NA	10	NA	NC	NA	NA	1	NA	NA	NA	NA
Chloroform	NA	0.66	0.000023	1	NA	NA	1	NA	NA	NA	NA
Dichloroethane,1,1-	4.7E-04	0.5	NA	NC	NA	NA	1	6E-05	1E-04	NA	1E-04
Dichloroethene, cis-1,2-	4.6E-04	0.035	NA	NC	NA	NA	1	6E-05	2E-03	NA	2E-03
Dichloroethene,1,1-	4.6E-04	0.2	NA	1	NA	NA	1	6E-05	3E-04	NA	3E-04
Tetrachloroethene	8.2E-04	4.6	0.00001	1	2E-05	2E-07	1	1E-04	2E-05	2E-07	2E-05
Trans-1,2-Dichloroethene	4.6E-04	0.07	NA	NC	NA	NA	1	6E-05	9E-04	NA	9E-04
Trichloroethane,1,1,1-	6.4E-04	5.2	NA	NC	NA	NA	1	9E-05	2E-05	NA	2E-05
Trichloroethene	6.4E-04	0.18	0.0000017	1	2E-05	3E-08	1	9E-05	5E-04	3E-08	5E-04
Vinyl chloride	3.0E-04	0.1	0.0000088	1	8E-06	7E-08	1	4E-05	4E-04	7E-08	4E-04
Total						3E-07			4E-03	3E-07	4E-03

NA - Not available
NC - Not calculated
ND - Not detected

Table A-7
Exposure and Risk Estimates Associated With Inhalation of Volatile Compounds in Air
50 Tufts Street, Somerville MA
UniFirst
Current/Future Resident at other streets
Indoor Air
9 Tufts Street (right Unit)

Receptor:	Resident ▼
Medium of Origin:	Indoor Air ▼
Exposure Medium:	Indoor Air ▼
Exposure Area:	9 Tufts Street (right Unit) ▼
Depth:	▼
Duration:	Chronic ▼

$$ADE_{inh} = \frac{C_{air} \times RAF_i \times ET \times EF \times EP \times CF1}{24hr/d \times 365d/y \times AT}$$

$$HI_{inh} = \frac{ADE_{inh}}{RfC}$$

$$Risk = ADE_{inh} \times URF \times C2$$

Parameter	Definition	Units	Value	Comment
ET	Indoor Air Exposure Time	h/d	24	
EF	Indoor Air Exposure Frequency	d/y	365	
EP	Indoor Air Exposure Period - Cancer	y	13	
EP	Indoor Air Exposure Period - Non-Cancer	y	7	
ATc	Indoor Air Averaging Time - Cancer	d	25550	
ATn	Indoor Air Averaging Time - Non-Cancer	d	2555	
C1	Conversion Factor	d/y	365	
C2	Conversion Factor	ug/mg	1000	

	EPC										
Compound	Indoor Air (mg/m3)	RfC (mg/m3)	URF 1/(ug/m3)	RAFic	ADE-c mg/m3	Riskinh	RAFinc	ADE-nc mg/m3	HIinh	Risk (Indoor Air)	HI (Indoor Air)
Carbon tetrachloride	NA	0.43	0.000015	1	NA	NA	1	NA	NA	NA	NA
Chloroethane	NA	10	NA	NC	NA	NA	1	NA	NA	NA	NA
Chloroform	NA	0.66	0.000023	1	NA	NA	1	NA	NA	NA	NA
Dichloroethane,1,1-	4.1E-04	0.5	NA	NC	NA	NA	1	4E-04	8E-04	NA	8E-04
Dichloroethene, cis-1,2-	4.0E-04	0.035	NA	NC	NA	NA	1	4E-04	1E-02	NA	1E-02
Dichloroethene,1,1-	4.0E-04	0.2	NA	1	NA	NA	1	4E-04	2E-03	NA	2E-03
Tetrachloroethene	4.2E-03	4.6	0.00001	1	8E-04	8E-06	1	4E-03	9E-04	8E-06	9E-04
Trans-1,2-Dichloroethene	4.0E-04	0.07	NA	NC	NA	NA	1	4E-04	6E-03	NA	6E-03
Trichloroethane,1,1,1-	5.5E-04	5.2	NA	NC	NA	NA	1	6E-04	1E-04	NA	1E-04
Trichloroethene	5.5E-04	0.18	0.0000017	1	1E-04	2E-07	1	6E-04	3E-03	2E-07	3E-03
Vinyl chloride	2.6E-04	0.1	0.0000088	1	5E-05	4E-07	1	3E-04	3E-03	4E-07	3E-03
Total						8E-06			3E-02	8E-06	3E-02

NA - Not available
NC - Not calculated
ND - Not detected

Table A-8
Exposure and Risk Estimates Associated With Inhalation of Volatile Compounds in Air
50 Tufts Street, Somerville MA
UniFirst
Current/Future Resident at other streets
Indoor Air
17 Tufts Street

Receptor:	Resident ▼
Medium of Origin:	Indoor Air ▼
Exposure Medium:	Indoor Air ▼
Exposure Area:	17 Tufts Street ▼
Depth:	▼
Duration:	Chronic ▼

$$ADE_{inh} = \frac{C_{air} \times RAF_i \times ET \times EF \times EP \times CF1}{24hr/d \times 365d/y \times AT}$$

$$HI_{inh} = \frac{ADE_{inh}}{RfC}$$

$$Risk = ADE_{inh} \times URF \times C2$$

Parameter	Definition	Units	Value	Comment
ET	Indoor Air Exposure Time	h/d	24	
EF	Indoor Air Exposure Frequency	d/y	365	
EP	Indoor Air Exposure Period - Cancer	y	13	
EP	Indoor Air Exposure Period - Non-Cancer	y	7	
ATc	Indoor Air Averaging Time - Cancer	d	25550	
ATn	Indoor Air Averaging Time - Non-Cancer	d	2555	
C1	Conversion Factor	d/y	365	
C2	Conversion Factor	ug/mg	1000	

Compound	EPC Indoor Air (mg/m3)	RfC (mg/m3)	URF 1/(ug/m3)	RAFic	ADE-c mg/m3	Riskinh	RAFinc	ADE-nc mg/m3	HIinh	Risk (Indoor Air)	HI (Indoor Air)
Carbon tetrachloride	NA	0.43	0.000015	1	NA	NA	1	NA	NA	NA	NA
Chloroethane	NA	10	NA	NC	NA	NA	1	NA	NA	NA	NA
Chloroform	NA	0.66	0.000023	1	NA	NA	1	NA	NA	NA	NA
Dichloroethane,1,1-	4.1E-04	0.5	NA	NC	NA	NA	1	4E-04	8E-04	NA	8E-04
Dichloroethene, cis-1,2-	4.0E-04	0.035	NA	NC	NA	NA	1	4E-04	1E-02	NA	1E-02
Dichloroethene,1,1-	4.0E-04	0.2	NA	1	NA	NA	1	4E-04	2E-03	NA	2E-03
Tetrachloroethene	3.5E-03	4.6	0.00001	1	7E-04	6E-06	1	4E-03	8E-04	6E-06	8E-04
Trans-1,2-Dichloroethene	4.0E-04	0.07	NA	NC	NA	NA	1	4E-04	6E-03	NA	6E-03
Trichloroethane,1,1,1-	5.5E-04	5.2	NA	NC	NA	NA	1	6E-04	1E-04	NA	1E-04
Trichloroethene	1.4E-03	0.18	0.0000017	1	3E-04	4E-07	1	1E-03	8E-03	4E-07	8E-03
Vinyl chloride	2.6E-04	0.1	0.0000088	1	5E-05	4E-07	1	3E-04	3E-03	4E-07	3E-03
Total						7E-06			3E-02	7E-06	3E-02

NA - Not available
NC - Not calculated
ND - Not detected

Table A-9
Exposure and Risk Estimates Associated With Inhalation of Volatile Compounds in Air
50 Tufts Street, Somerville MA
UniFirst
Current/Future Resident at other streets
Indoor Air
19 Tufts Street

Receptor:	Resident ▼
Medium of Origin:	Indoor Air ▼
Exposure Medium:	Indoor Air ▼
Exposure Area:	19 Tufts Street ▼
Depth:	▼
Duration:	Chronic ▼

$$ADE_{inh}=\frac{C_{air}\times RAF_i\times ET\times EF\times EP\times CF1}{24hr/d\times 365d/y\times AT}$$

$$HI_{inh}=\frac{ADE_{inh}}{RfC}$$

$$Risk=ADE_{inh}\times URF\times C2$$

Parameter	Definition	Units	Value	Comment
ET	Indoor Air Exposure Time	h/d	24	
EF	Indoor Air Exposure Frequency	d/y	365	
EP	Indoor Air Exposure Period - Cancer	y	13	
EP	Indoor Air Exposure Period - Non-Cancer	y	7	
ATc	Indoor Air Averaging Time - Cancer	d	25550	
ATn	Indoor Air Averaging Time - Non-Cancer	d	2555	
C1	Conversion Factor	d/y	365	
C2	Conversion Factor	ug/mg	1000	

	EPC										
Compound	Indoor Air (mg/m3)	RfC (mg/m3)	URF 1/(ug/m3)	RAFic	ADE-c mg/m3	Riskinh	RAFinc	ADE-nc mg/m3	HIinh	Risk (Indoor Air)	HI (Indoor Air)
Carbon tetrachloride	NA	0.43	0.000015	1	NA	NA	1	NA	NA	NA	NA
Chloroethane	NA	10	NA	NC	NA	NA	1	NA	NA	NA	NA
Chloroform	NA	0.66	0.000023	1	NA	NA	1	NA	NA	NA	NA
Dichloroethane,1,1-	4.1E-04	0.5	NA	NC	NA	NA	1	4E-04	8E-04	NA	8E-04
Dichloroethene, cis-1,2-	4.0E-04	0.035	NA	NC	NA	NA	1	4E-04	1E-02	NA	1E-02
Dichloroethene,1,1-	4.0E-04	0.2	NA	1	NA	NA	1	4E-04	2E-03	NA	2E-03
Tetrachloroethene	4.2E-03	4.6	0.00001	1	8E-04	8E-06	1	4E-03	9E-04	8E-06	9E-04
Trans-1,2-Dichloroethene	4.0E-04	0.07	NA	NC	NA	NA	1	4E-04	6E-03	NA	6E-03
Trichloroethane,1,1,1-	5.5E-04	5.2	NA	NC	NA	NA	1	6E-04	1E-04	NA	1E-04
Trichloroethene	1.7E-03	0.18	0.0000017	1	3E-04	5E-07	1	2E-03	9E-03	5E-07	9E-03
Vinyl chloride	2.6E-04	0.1	0.0000088	1	5E-05	4E-07	1	3E-04	3E-03	4E-07	3E-03
Total						9E-06			3E-02	9E-06	3E-02

NA - Not available
NC - Not calculated
ND - Not detected

Table A-10
Exposure and Risk Estimates Associated With Inhalation of Volatile Compounds in Air
50 Tufts Street, Somerville MA
UniFirst
Current/Future Resident at other streets
Indoor Air
95 Franklin Street

Receptor:	Resident ▼
Medium of Origin:	Indoor Air ▼
Exposure Medium:	Indoor Air ▼
Exposure Area:	95 Franklin Street ▼
Depth:	▼
Duration:	Chronic ▼

$$ADE_{inh} = \frac{C_{air} \times RAF_i \times ET \times EF \times EP \times CF1}{24hr/d \times 365d/y \times AT}$$

$$HI_{inh} = \frac{ADE_{inh}}{RfC}$$

$$Risk = ADE_{inh} \times URF \times C2$$

Parameter	Definition	Units	Value	Comment
ET	Indoor Air Exposure Time	h/d	24	
EF	Indoor Air Exposure Frequency	d/y	365	
EP	Indoor Air Exposure Period - Cancer	y	13	
EP	Indoor Air Exposure Period - Non-Cancer	y	7	
ATc	Indoor Air Averaging Time - Cancer	d	25550	
ATn	Indoor Air Averaging Time - Non-Cancer	d	2555	
C1	Conversion Factor	d/y	365	
C2	Conversion Factor	ug/mg	1000	

	EPC										
Compound	Indoor Air (mg/m3)	RfC (mg/m3)	URF 1/(ug/m3)	RAFic	ADE-c mg/m3	Riskinh	RAFinc	ADE-nc mg/m3	HIinh	Risk (Indoor Air)	HI (Indoor Air)
Carbon tetrachloride	NA	0.43	0.000015	1	NA	NA	1	NA	NA	NA	NA
Chloroethane	NA	10	NA	NC	NA	NA	1	NA	NA	NA	NA
Chloroform	NA	0.66	0.000023	1	NA	NA	1	NA	NA	NA	NA
Dichloroethane,1,1-	4.1E-04	0.5	NA	NC	NA	NA	1	4E-04	8E-04	NA	8E-04
Dichloroethene, cis-1,2-	4.0E-04	0.035	NA	NC	NA	NA	1	4E-04	1E-02	NA	1E-02
Dichloroethene,1,1-	4.0E-04	0.2	NA	1	NA	NA	1	4E-04	2E-03	NA	2E-03
Tetrachloroethene	1.7E-03	4.6	0.00001	1	3E-04	3E-06	1	2E-03	4E-04	3E-06	4E-04
Trans-1,2-Dichloroethene	4.0E-04	0.07	NA	NC	NA	NA	1	4E-04	6E-03	NA	6E-03
Trichloroethane,1,1,1-	5.5E-04	5.2	NA	NC	NA	NA	1	6E-04	1E-04	NA	1E-04
Trichloroethene	5.5E-04	0.18	0.0000017	1	1E-04	2E-07	1	6E-04	3E-03	2E-07	3E-03
Vinyl chloride	2.6E-04	0.1	0.0000088	1	5E-05	4E-07	1	3E-04	3E-03	4E-07	3E-03
Total						4E-06			3E-02	4E-06	3E-02

NA - Not available
NC - Not calculated
ND - Not detected

Table A-11
Exposure and Risk Estimates Associated With Inhalation of Volatile Compounds in Air
50 Tufts Street, Somerville MA
UniFirst
Current/Future Resident at other streets
Indoor Air
17 Knowlton Street

Receptor:	Resident ▼
Medium of Origin:	Indoor Air ▼
Exposure Medium:	Indoor Air ▼
Exposure Area:	17 Knowlton Street ▼
Depth:	▼
Duration:	Chronic ▼

$$ADE_{inh} = \frac{C_{air} \times RAF_i \times ET \times EF \times EP \times CF1}{24hr/d \times 365d/y \times AT}$$

$$HI_{inh} = \frac{ADE_{inh}}{RfC}$$

$$Risk = ADE_{inh} \times URF \times C2$$

Parameter	Definition	Units	Value	Comment
ET	Indoor Air Exposure Time	h/d	24	
EF	Indoor Air Exposure Frequency	d/y	365	
EP	Indoor Air Exposure Period - Cancer	y	13	
EP	Indoor Air Exposure Period - Non-Cancer	y	7	
ATc	Indoor Air Averaging Time - Cancer	d	25550	
ATn	Indoor Air Averaging Time - Non-Cancer	d	2555	
C1	Conversion Factor	d/y	365	
C2	Conversion Factor	ug/mg	1000	

	EPC										
Compound	Indoor Air (mg/m3)	RfC (mg/m3)	URF 1/(ug/m3)	RAFic	ADE-c mg/m3	Riskinh	RAFinc	ADE-nc mg/m3	HIinh	Risk (Indoor Air)	HI (Indoor Air)
Carbon tetrachloride	NA	0.43	0.000015	1	NA	NA	1	NA	NA	NA	NA
Chloroethane	NA	10	NA	NC	NA	NA	1	NA	NA	NA	NA
Chloroform	NA	0.66	0.000023	1	NA	NA	1	NA	NA	NA	NA
Dichloroethane,1,1-	4.1E-04	0.5	NA	NC	NA	NA	1	4E-04	8E-04	NA	8E-04
Dichloroethene, cis-1,2-	4.0E-04	0.035	NA	NC	NA	NA	1	4E-04	1E-02	NA	1E-02
Dichloroethene,1,1-	4.0E-04	0.2	NA	1	NA	NA	1	4E-04	2E-03	NA	2E-03
Tetrachloroethene	1.1E-03	4.6	0.00001	1	2E-04	2E-06	1	1E-03	2E-04	2E-06	2E-04
Trans-1,2-Dichloroethene	4.0E-04	0.07	NA	NC	NA	NA	1	4E-04	6E-03	NA	6E-03
Trichloroethane,1,1,1-	5.5E-04	5.2	NA	NC	NA	NA	1	6E-04	1E-04	NA	1E-04
Trichloroethene	5.5E-04	0.18	0.0000017	1	1E-04	2E-07	1	6E-04	3E-03	2E-07	3E-03
Vinyl chloride	2.6E-04	0.1	0.0000088	1	5E-05	4E-07	1	3E-04	3E-03	4E-07	3E-03
Total						3E-06			3E-02	3E-06	3E-02

NA - Not available
NC - Not calculated
ND - Not detected

Table A-12
Exposure and Risk Estimates Associated With Inhalation of Volatile Compounds in Air
50 Tufts Street, Somerville MA
UniFirst
Current/Future Resident at other streets
Indoor Air
10 Morton Street

Receptor:	Resident ▼
Medium of Origin:	Indoor Air ▼
Exposure Medium:	Indoor Air ▼
Exposure Area:	10 Morton Street ▼
Depth:	▼
Duration:	Chronic ▼

$$ADE_{inh}=\frac{C_{air}\times RAF_i\times ET\times EF\times EP\times CF1}{24hr/d\times 365d/y\times AT}$$

$$HI_{inh}=\frac{ADE_{inh}}{RfC}$$

$$Risk=ADE_{inh}\times URF\times C2$$

Parameter	Definition	Units	Value	Comment
ET	Indoor Air Exposure Time	h/d	24	
EF	Indoor Air Exposure Frequency	d/y	365	
EP	Indoor Air Exposure Period - Cancer	y	13	
EP	Indoor Air Exposure Period - Non-Cancer	y	7	
ATc	Indoor Air Averaging Time - Cancer	d	25550	
ATn	Indoor Air Averaging Time - Non-Cancer	d	2555	
C1	Conversion Factor	d/y	365	
C2	Conversion Factor	ug/mg	1000	

Compound	EPC Indoor Air (mg/m3)	RfC (mg/m3)	URF 1/(ug/m3)	RAFic	ADE-c mg/m3	Riskinh	RAFinc	ADE-nc mg/m3	HIinh	Risk (Indoor Air)	HI (Indoor Air)
Carbon tetrachloride	NA	0.43	0.000015	1	NA	NA	1	NA	NA	NA	NA
Chloroethane	NA	10	NA	NC	NA	NA	1	NA	NA	NA	NA
Chloroform	NA	0.66	0.000023	1	NA	NA	1	NA	NA	NA	NA
Dichloroethane,1,1-	4.1E-04	0.5	NA	NC	NA	NA	1	4E-04	8E-04	NA	8E-04
Dichloroethene, cis-1,2-	4.0E-04	0.035	NA	NC	NA	NA	1	4E-04	1E-02	NA	1E-02
Dichloroethene,1,1-	4.0E-04	0.2	. NA	1	NA	NA	1	4E-04	2E-03	NA	2E-03
Tetrachloroethene	7.0E-04	4.6	0.00001	1	1E-04	1E-06	1	7E-04	2E-04	1E-06	2E-04
Trans-1,2-Dichloroethene	4.0E-04	0.07	NA	NC	NA	NA	1	4E-04	6E-03	NA	6E-03
Trichloroethane,1,1,1-	5.5E-04	5.2	NA	NC	NA	NA	1	6E-04	1E-04	NA	1E-04
Trichloroethene	1.4E-03	0.18	1.7E-06	1	3E-04	4E-07	1	1E-03	8E-03	4E-07	8E-03
Vinyl chloride	2.6E-04	0.1	8.8E-06	1	5E-05	4E-07	1	3E-04	3E-03	4E-07	3E-03
Total						2E-06			3E-02	2E-06	3E-02

NA - Not available
NC - Not calculated
ND - Not detected

Table A-13
Exposure and Risk Estimates Associated With Inhalation of Volatile Compounds in Air
50 Tufts Street, Somerville MA
UniFirst
Current/Future Resident at other streets
Indoor Air
18 Morton Street

Receptor:	Resident ▼
Medium of Origin:	Indoor Air ▼
Exposure Medium:	Indoor Air ▼
Exposure Area:	18 Morton Street ▼
Depth:	▼
Duration:	Chronic ▼

$$ADE_{inh} = \frac{C_{air} \times RAF_i \times ET \times EF \times EP \times CF1}{24hr/d \times 365d/y \times AT}$$

$$HI_{inh} = \frac{ADE_{inh}}{RfC}$$

$$Risk = ADE_{inh} \times URF \times C2$$

Parameter	Definition	Units	Value	Comment
ET	Indoor Air Exposure Time	h/d	24	
EF	Indoor Air Exposure Frequency	d/y	365	
EP	Indoor Air Exposure Period - Cancer	y	13	
EP	Indoor Air Exposure Period - Non-Cancer	y	7	
ATc	Indoor Air Averaging Time - Cancer	d	25550	
ATn	Indoor Air Averaging Time - Non-Cancer	d	2555	
C1	Conversion Factor	d/y	365	
C2	Conversion Factor	ug/mg	1000	

Compound	EPC Indoor Air (mg/m3)	RfC (mg/m3)	URF 1/(ug/m3)	RAFic	ADE-c mg/m3	Riskinh	RAFinc	ADE-nc mg/m3	HIinh	Risk (Indoor Air)	HI (Indoor Air)
Carbon tetrachloride	NA	0.43	0.000015	1	NA	NA	1	NA	NA	NA	NA
Chloroethane	NA	10	NA	NC	NA	NA	1	NA	NA	NA	NA
Chloroform	NA	0.66	0.000023	1	NA	NA	1	NA	NA	NA	NA
Dichloroethane,1,1-	4.1E-04	0.5	NA	NC	NA	NA	1	4E-04	8E-04	NA	8E-04
Dichloroethene, cis-1,2-	4.0E-04	0.035	NA	NC	NA	NA	1	4E-04	1E-02	NA	1E-02
Dichloroethene,1,1-	4.0E-04	0.2	NA	1	NA	NA	1	4E-04	2E-03	NA	2E-03
Tetrachloroethene	1.3E-03	4.6	0.00001	1	2E-04	2E-06	1	1E-03	3E-04	2E-06	3E-04
Trans-1,2-Dichloroethene	4.0E-04	0.07	NA	NC	NA	NA	1	4E-04	6E-03	NA	6E-03
Trichloroethane,1,1,1-	5.5E-04	5.2	NA	NC	NA	NA	1	6E-04	1E-04	NA	1E-04
Trichloroethene	7.1E-04	0.18	1.7E-06	1	1E-04	2E-07	1	7E-04	4E-03	2E-07	4E-03
Vinyl chloride	2.6E-04	0.1	8.8E-06	1	5E-05	4E-07	1	3E-04	3E-03	4E-07	3E-03
Total						3E-06			3E-02	3E-06	3E-02

NA - Not available
NC - Not calculated
ND - Not detected

Table A-14
Exposure and Risk Estimates Associated With Inhalation of Volatile Compounds in Air
50 Tufts Street, Somerville MA
UniFirst
Current/Future Resident at other streets
Indoor Air
19-19A Morton Street

Receptor:	Resident ▼
Medium of Origin:	Indoor Air ▼
Exposure Medium:	Indoor Air ▼
Exposure Area:	19-19A Morton Street ▼
Depth:	▼
Duration:	Chronic ▼

$$ADE_{inh}=\frac{C_{air}\times RAF_i\times ET\times EF\times EP\times CF1}{24hr/d\times 365d/y\times AT}$$

$$HI_{inh}=\frac{ADE_{inh}}{RfC}$$

$$Risk=ADE_{inh}\times URF\times C2$$

Parameter	Definition	Units	Value	Comment
ET	Indoor Air Exposure Time	h/d	24	
EF	Indoor Air Exposure Frequency	d/y	365	
EP	Indoor Air Exposure Period - Cancer	y	13	
EP	Indoor Air Exposure Period - Non-Cancer	y	7	
ATc	Indoor Air Averaging Time - Cancer	d	25550	
ATn	Indoor Air Averaging Time - Non-Cancer	d	2555	
C1	Conversion Factor	d/y	365	
C2	Conversion Factor	ug/mg	1000	

	EPC										
Compound	Indoor Air (mg/m3)	RfC (mg/m3)	URF 1/(ug/m3)	RAFic	ADE-c mg/m3	Riskinh	RAFinc	ADE-nc mg/m3	Hlinh	Risk (Indoor Air)	HI (Indoor Air)
Carbon tetrachloride	NA	0.43	0.000015	1	NA	NA	1	NA	NA	NA	NA
Chloroethane	NA	10	NA	NC	NA	NA	1	NA	NA	NA	NA
Chloroform	NA	0.66	0.000023	1	NA	NA	1	NA	NA	NA	NA
Dichloroethane,1,1-	4.1E-04	0.5	NA	NC	NA	NA	1	4E-04	8E-04	NA	8E-04
Dichloroethene, cis-1,2-	4.0E-04	0.035	NA	NC	NA	NA	1	4E-04	1E-02	NA	1E-02
Dichloroethene,1,1-	4.0E-04	0.2	NA	1	NA	NA	1	4E-04	2E-03	NA	2E-03
Tetrachloroethene	1.7E-03	4.6	0.00001	1	3E-04	3E-06	1	2E-03	4E-04	3E-06	4E-04
Trans-1,2-Dichloroethene	4.0E-04	0.07	NA	NC	NA	NA	1	4E-04	6E-03	NA	6E-03
Trichloroethane,1,1,1-	5.5E-04	5.2	NA	NC	NA	NA	1	6E-04	1E-04	NA	1E-04
Trichloroethene	5.5E-04	0.18	1.7E-06	1	1E-04	2E-07	1	6E-04	3E-03	2E-07	3E-03
Vinyl chloride	2.6E-04	0.1	8.8E-06	1	5E-05	4E-07	1	3E-04	3E-03	4E-07	3E-03
Total						4E-06			3E-02	4E-06	3E-02

NA - Not available
NC - Not calculated
ND - Not detected

Table A-15
Exposure and Risk Estimates Associated With Inhalation of Volatile Compounds in Air
50 Tufts Street, Somerville MA
UniFirst
Current/Future Resident at other streets
Indoor Air
117 Washington Street

Receptor:	Resident ▼
Medium of Origin:	Indoor Air ▼
Exposure Medium:	Indoor Air ▼
Exposure Area:	117 Washington Street ▼
Depth:	▼
Duration:	Chronic ▼

$$ADE_{inh} = \frac{C_{air} \times RAF_i \times ET \times EF \times EP \times CF1}{24hr/d \times 365d/y \times AT}$$

$$HI_{inh} = \frac{ADE_{inh}}{RfC}$$

$$Risk = ADE_{inh} \times URF \times C2$$

Parameter	Definition	Units	Value	Comment
ET	Indoor Air Exposure Time	h/d	24	
EF	Indoor Air Exposure Frequency	d/y	365	
EP	Indoor Air Exposure Period - Cancer	y	13	
EP	Indoor Air Exposure Period - Non-Cancer	y	7	
ATc	Indoor Air Averaging Time - Cancer	d	25550	
ATn	Indoor Air Averaging Time - Non-Cancer	d	2555	
C1	Conversion Factor	d/y	365	
C2	Conversion Factor	ug/mg	1000	

	EPC										
Compound	Indoor Air (mg/m3)	RfC (mg/m3)	URF 1/(ug/m3)	RAFic	ADE-c mg/m3	Riskinh	RAFinc	ADE-nc mg/m3	HIinh	Risk (Indoor Air)	HI (Indoor Air)
Carbon tetrachloride	NA	0.43	0.000015	1	NA	NA	1	NA	NA	NA	NA
Chloroethane	NA	10	NA	NC	NA	NA	1	NA	NA	NA	NA
Chloroform	NA	0.66	0.000023	1	NA	NA	1	NA	NA	NA	NA
Dichloroethane,1,1-	4.1E-04	0.5	NA	NC	NA	NA	1	4E-04	8E-04	NA	8E-04
Dichloroethene, cis-1,2-	4.0E-04	0.035	NA	NC	NA	NA	1	4E-04	1E-02	NA	1E-02
Dichloroethene,1,1-	4.0E-04	0.2	NA	1	NA	NA	1	4E-04	2E-03	NA	2E-03
Tetrachloroethene	1.5E-03	4.6	0.00001	1	3E-04	3E-06	1	2E-03	3E-04	3E-06	3E-04
Trans-1,2-Dichloroethene	4.0E-04	0.07	NA	NC	NA	NA	1	4E-04	6E-03	NA	6E-03
Trichloroethane,1,1,1-	5.5E-04	5.2	NA	NC	NA	NA	1	6E-04	1E-04	NA	1E-04
Trichloroethene	5.5E-04	0.18	0.0000017	1	1E-04	2E-07	1	6E-04	3E-03	2E-07	3E-03
Vinyl chloride	2.6E-04	0.1	0.0000088	1	5E-05	4E-07	1	3E-04	3E-03	4E-07	3E-03
Total						3E-06			3E-02	3E-06	3E-02

NA - Not available
NC - Not calculated
ND - Not detected

PHASE IV FIR, RMR NO. 15, & PHASE V ROS
50 TUFTS STREET SITE
Somerville, Massachusetts
GEI Project No. 04516-3

6123FG302LH3360383

11-6507

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